

State Route 84 Storm Damage Permanent Restoration Project

SAN MATEO COUNTY, CALIFORNIA
CALTRANS DISTRICT 04
STATE ROUTE 84, POST MILE 7.8
EA: 04-0Q480
EFIS: 0418000107

DRAFT Initial Study with Proposed Mitigated Negative Declaration



Prepared by the
State of California, Department of Transportation



June 2022

General Information about This Document

What's in this document:

The California Department of Transportation (Caltrans) has prepared this Initial Study (IS) with Proposed Mitigated Negative Declaration (IS/MND) to examine the potential environmental impacts of a permanent storm damage restoration project on State Route (SR) 84, at post mile 7.8, along the bank of San Gregorio Creek, in San Mateo County, California. Caltrans is the lead agency under the California Environmental Quality Act (CEQA). This document explains why the project is being proposed, how the existing environment could be affected by the project, the potential impacts of each proposed activity, and the proposed avoidance, minimization, and/or mitigation measures.

What you should do:

- Please read this document.
- The document, maps, and Project information are available to download at the Caltrans environmental document website (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>).
- We would like to hear what you think. If you have any comments about the proposed project or requests for a copy of this IS or related technical studies, please send comments by mail or email to:

Caltrans, District 4
Office of Environmental Analysis
ATTN: Tanvi Gupta
P.O. Box 23660, MS: 8B
Oakland, CA 94623-0660

Or Tanvi.Gupta@dot.ca.gov (preferred)

- Be sure to send comments on this document by the deadline: August 5th, 2022

What happens next:

Per CEQA Section 15073, Caltrans would circulate the IS/MND for review for 30 days. During the 30-day public review period, the general public and responsible and trustee agencies can submit comments on this document to Caltrans. Caltrans would consider the comments and would respond to the comments after the 30-day public review period. After comments are received from the public and reviewing agencies, Caltrans may (1) grant environmental approval to the proposed Project, (2) conduct additional environmental Storm Damage Permanent Restoration Initial Study with Proposed Mitigated Negative Declaration studies, or (3) abandon the Project. If the Project is given environmental approval and funding is obtained, Caltrans could design and construct all or part of the Project.

Alternative Formats:

For individuals with sensory disabilities, this document can be made available in Braille, in large print, or digital audio. To obtain a copy in one of these alternate formats, please call or write to the California Department of Transportation, District 4, Attn: Tanvi Gupta, Associate Environmental Planner, P.O. Box 23660, MS: 8B, Oakland, CA 94623-0660; (510) 421-8378 (Voice), or use the California Relay Service 1 (800) 735-2929 (TTY), 1 (800) 735-2929 (Voice) or 711.

An ADA-compliant electronic copy of this document is available to download at: [the Caltrans environmental document website](https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs) (https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs).

DRAFT Initial Study with Proposed Mitigated Negative Declaration

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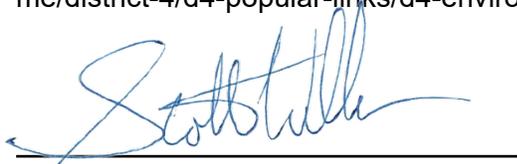
Dist. – Co. – Rte.

Postmile

District-E.A.

Project title:	Storm Damage Permanent Restoration
Lead agency name and address:	California Department of Transportation 111 Grand Avenue, Oakland, CA 94612
Contact person and phone number:	Tanvi Gupta, Associate Environmental Planner (510) 421-8378
Project location:	San Mateo County, California
General plan description:	Highway
Zoning:	Transportation Highway, Public Facilities
Other public agencies whose approval is required (e.g., permits, financial approval, or participation agreements)	<ul style="list-style-type: none"> • California Transportation Commission • United States Fish and Wildlife Service • California Department of Fish and Wildlife • United States Army Corps of Engineers • San Francisco Bay Regional Water Quality Control Board • National Marine Fisheries Service

The document, maps, Project information, and supporting technical studies are provided upon request from Tanvi Gupta; Tanvi.Gupta@dot.ca.gov. This document is also available to download at the Caltrans environmental document website (<https://dot.ca.gov/caltrans-near-me/district-4/d4-popular-links/d4-environmental-docs>).



Scott M. Williams
Acting Office Chief, Environmental Analysis
California Department of Transportation
CEQA Lead Agency

6/28/2022
Date

Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes a storm damage permanent restoration project (Project) on State Route (SR) 84, at Post Mile 7.8, along the bank of the San Gregorio Creek, in San Mateo County, California.

Determination

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is Caltrans' intent to adopt an MND for this Project. This does not mean that Caltrans' decision regarding the Project is final. This MND is subject to change based on comments received by interested agencies and the public. Caltrans has prepared an Initial Study for this Project, and pending public review, has determined from this study that the proposed Project would not have a significant effect on the environment for the following reasons:

The proposed Project would have no effect on agricultural lands and forest resources, air quality, cultural resources, land use and planning, mineral resources, recreation, noise, population and housing, tribal cultural resources, utilities and service systems, and public services.

With standard Caltrans conservation measures and project-specific avoidance and minimization measures, the proposed Project would have a less than significant impact on aesthetics, energy, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, transportation and traffic, and wildfire.

The proposed Project would have a less than significant impact with mitigation on biological resources.

Melanie Brent
Deputy District Director
Environmental Planning and Engineering
California Department of Transportation

Date

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Chapter 1 Proposed Project

1.1 Introduction

The California Department of Transportation (Caltrans) is the California Environmental Quality Act (CEQA) lead agency and sponsor for the proposed State Route 84 Storm Damage Permanent Restoration Project (Project) and has prepared this Proposed Mitigated Negative Declaration.

1.1.1 Project Location

The Project is located on State Route (SR) 84, at post mile (PM) 7.8, along the bank of San Gregorio Creek, in San Mateo County, California (see Figure 1-1).

This Project is funded through California Senate Bill 1 Program funds for Major Damage (Permanent Restoration) as a State Highway Operation and Protection Program project.

1.2 Purpose and Need

The purpose of the Project is to permanently repair a slope that was washed out during storm events in 2017 and again in 2019, prevent further soil erosion along this area, and protect the roadway segment adjacent to the San Gregorio Creek from future structural damage.

The project is needed to permanently repair the eroded creek bank and prevent further soil erosion. This would protect the structural integrity of the highway and maintain its functionality. A large volume of storm water infiltration under the roadway has created soil erosion at the creek embankment, exposing an existing off-set segmented pile wall. The erosion has not caused pavement cracks, or damage to the shoulder or the guardrail posts, but without remediation, it may be a future concern. If not addressed, further erosion would affect the structural integrity of the highway and ultimately the safety of the travelling public.

Figure 1-1 Project Vicinity

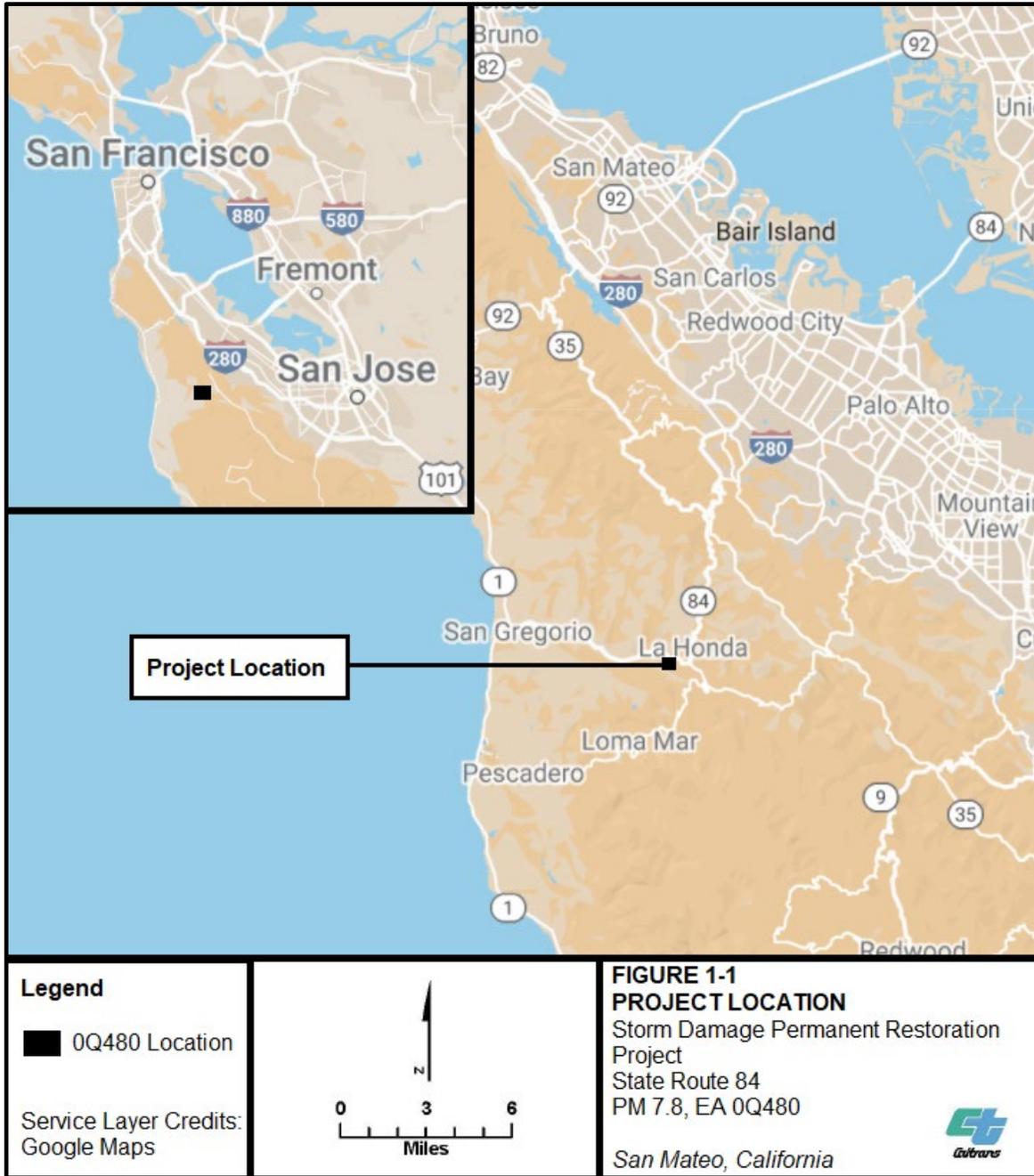


Figure 1-2 Project Location



Chapter 2 Project Description

2.1 Introduction

Within the Project limits, State Route (SR) 84 is a rural two-lane conventional highway with twelve-foot lanes and two six-foot shoulders. This section of SR 84 begins at SR 1 on the Pacific Coast in San Gregorio and extends generally northeast to Menlo Park. The roadway is narrow and winding as it traverses San Mateo County, following San Gregorio Road and La Honda Road, and crossing the forested Santa Cruz Mountains.

Within the Project limits, there is an existing 65-foot secant pile wall built along San Gregorio Creek in 2004. This secant pile wall acts as a retaining wall, with alternating primary and secondary piles that form a continuous impervious structure. Several of the piles in the first row of the wall have been exposed due to erosion along this segment of the roadway.

The current Project Alternatives being evaluated are the proposed Build Alternative and No Build alternative.

2.2 Build Alternative – Proposed Project

Caltrans proposes to build a new soldier pile and timber lagging wall, reconstruct the drainage system; replace the existing metal beam guardrail (MBGR); replace California ST-10 bridge rails with CA ST-75 bridge rails (see Figure 2-1); and repave the bridge deck at PM 7.8 on State Route (SR) 84 along San Gregorio Creek. The proposed Project would utilize bioengineered bank stabilization methods and indirect channel training measures to locally restore the San Gregorio Creek channel and shift the creek to a more westerly alignment to provide an additional buffer between the channel and the roadway. These measures are discussed in more detail in Section 2.2.2 Creek Work. These measures would also protect the eastern bank and the proposed soldier pile wall from erosive channel flows and prevent excessive scour along the eastern bank at this location.

2.2.1 Structure Work

The new soldier pile and timber lagging wall would be 129 feet long and would be constructed in front of the existing 65-foot secant pile wall, which would be left in place. The new wall would be offset from the current wall by approximately 6 feet. The wall's foundation would be made of 14-inch steel soldier piles placed into 30-inch (in diameter) drilled holes. The maximum exposed wall height would be approximately 20 feet. The area behind the soldier pile wall would be backfilled with cellular concrete which would be wrapped by a heavy-duty plastic barrier. The existing MBGR would be upgraded to Midwest guardrail system (MGS), which is the standard guardrail system currently used by Caltrans. The existing California ST-10 bridge rails would be replaced with CA ST-75 bridge rails (see Figure 2-1).

2.2.2 Creek Work

Working “in the dry” refers to the dewatering of areas where piers, abutments, bulkheads, retaining walls, or other structures must be built in areas with flowing or standing water (e.g., creeks, rivers, lakes, wetlands, etc.) Working in the dry typically involves the use of a diversion or cofferdam. Another interchangeable term for general dewatering devices is a temporary creek diversion system (TCDS) which employs a variety of methods to protect water

quality during construction activities in a waterway. They reroute or restrict flows from the waterway which allows for construction to occur in, along the bank, or beneath the active channel.

Temporary diversion methods include temporary diversion channels, pump-arounds, piped diversions, coffer dams and other similar practices. The purpose of utilizing a TCDS is to protect water quality by passing upstream flows around an active construction zone. Based on the type of TCDS implemented, it may also convey the added benefit of maintaining a continual aquatic habitat connection which has the potential to benefit many aquatic species. Furthermore, it functions to keep water from entering the site during construction which increases work site safety and ensures the most optimal construction means of the structure.

A TCDS would be required for work at San Gregorio Creek. The system would be in place during the in-water work window between June 1-October 31, and in-water work would not exceed this work window. The TCDS may extend beyond Caltrans ROW and hence would require a TCE prior to it being installed. Nonetheless, it will be removed at the completion of scheduled in-water work. The specific TCDS utilized on this project would be a type of coffer dam which confines flows to one side of the stream. The nexus between the dewatered work area and creek would be achieved by employing K-rail, gravel bags, and polyethylene plastic sheeting, 10 feet from the edge of pavement (see Figure 2-2). This will function as a raised barrier and the water in between the K-rail and secant wall will be pumped out to facilitate the dry work area and will subsequently restrict the flow channel to bank side where construction activities will not transpire.

After the creek has been temporarily diverted, a total of 19 CIDH piles spaced 7 feet apart on center would be installed. Installation of the piles would require trenching of about 10 feet deep and up to 35 feet from the existing wall for the purposes of bank stabilization and creek channel training measures.

In addition to the installation of the new soldier pile wall, the creek would be realigned to the west to provide an additional buffer between the channel and retaining wall. Realignment of the creek would occur via bioengineered bank stabilization methods that may include the installation of a combination of large woody debris, root wads, engineered log jams, boulder clusters, and native material revetments accompanied by native plantings. This includes willow or other plant species. Indirect channel training measures, including bank stabilization, may include the installation of submerged or partially submerged rock weirs, rock vanes, rock spurs, or rock dikes upstream of the wall location. These measures are anticipated to work with the natural stream geomorphology to guide the creek to a more westerly alignment over a period of time. Creek restoration would strive to recreate, to the maximum extent feasible, microhabitats (deep pools, side channel ponds, cobblestone substrates, etc.) that are conducive to various life stages of aquatic invertebrates, salmonids, and other aquatic species.

2.2.3 Roadway Work

The roadway pavement would be grinded and overlaid with 0.1 feet of new asphalt-concrete. The roadway shoulder on the creek side would be widened by approximately 6 to 8 feet. At the ends of the new wall, the widened shoulder would be transitioned and conformed to the existing shoulder width.

2.2.4 Drainage Reconstruction

There is an existing 24-inch corrugated steel pipe (CSP) cross-culvert that is located beneath SR-84 at approximately 300 feet and outpours into San Gregorio Creek. The existing CSP cross-culvert would be replaced with an alternative pipe culvert (APC) of the same diameter and length. The existing drainage inlet (DI) located behind the existing MBGR along the eastbound side of SR 84 would remain. The 24-inch CSP culvert from the DI to San Gregorio Creek would be replaced in kind. This section of the culvert would go through the proposed soldier pile wall and outfall at the same location. A flared end section would be placed at the outfall directing flows over existing bank revetments into San Gregorio Creek.

Caltrans would remove all human-made debris that currently litters the creek bed within the Project footprint (CSP, metal sheeting, telecommunications infrastructure, etc.).

2.2.5 Right-of-Way Requirements

The proposed creek work might require going beyond the Caltrans right of way. A temporary construction easement would be needed for this Project.

2.3 Construction Methodology, Schedule, and Equipment

The details described in this section represent the methods most likely to be used in constructing this Project. Construction procedures would be better defined during the design phase, after Project approval. Construction plans are developed into finer detail and regulatory agency permits are obtained during the Plans, Specifications, and Estimates phase. Ultimately some details of Project construction would be left to the discretion of the contractor who is awarded the Project.

2.3.1 Staged Construction and Traffic Management

The Project would be constructed in three stages. The first stage would involve clearing and grubbing to remove any above-ground vegetation to provide access to the site. In the second stage, a temporary signal system for one-way traffic control would be set up for approximately four months to maintain safety buffers between work crews and traffic along the project limits. Temporary K-rails would be placed to separate traffic and construction activities. The construction work would include soldier pile wall construction, drainage system reconstruction, creek bank stabilization, and MBGR replacement. An access road would be constructed to enter the creek from the left side of the existing wall. A pioneer road would be constructed from the right side of the existing wall to transport materials using a crane. The creek would be diverted using piping and K-rail and dewatered using alder tanks which contain hazardous and non-hazardous liquids and solids. Disposal and dewatering would be controlled by testing the water for turbidity. The paved shoulder area by the left side of the existing wall would be used as a staging and stock piling area. In the third stage, pavement overlay, final striping, permanent erosion control, highway planting, and a five-year plant establishment period would be implemented. It is anticipated that all the project work would be done during the daytime.

2.3.2 Schedule

Construction is anticipated to begin in 2024 and take up to 225 working days to complete. In-creek work would be limited to the dry season (June 1 – Oct 31). Construction would be anticipated to be completed in one dry season.

2.3.3 Equipment

Construction equipment would include, but not be limited to hand-tools, backhoes, excavators, front loaders, skid steers, drill rigs, concrete trucks, dump trucks, water trucks, pavers, paving equipment, hydraulics cranes, alder tanks, and striping trucks.

2.3.4 Impacts to Vegetation

The Project proposes the clearing and grubbing of vegetation to create a clear work area. Trees and riparian vegetation removed during construction would be replaced on-site. A total of 14 trees would be removed. A complete inventory of the trees, including number of individual trees of each species, is available in Chapter 3, Biological Resources, Section 3.2.4 b. Caltrans would restore excavated areas beyond the riparian zone with native soil and replant with native species commensurate with those being removed. Replacement planting would include a potential five-year plant establishment period with erosion control maintenance and weed control. Additional measures to satisfy permit condition requirements might include removal of exotic, invasive species, including but not limited to, Algerian ivy (*Hedera canariensis*) along the embankment east of the guardrail and the area restored to a more natural assemblage of flora.

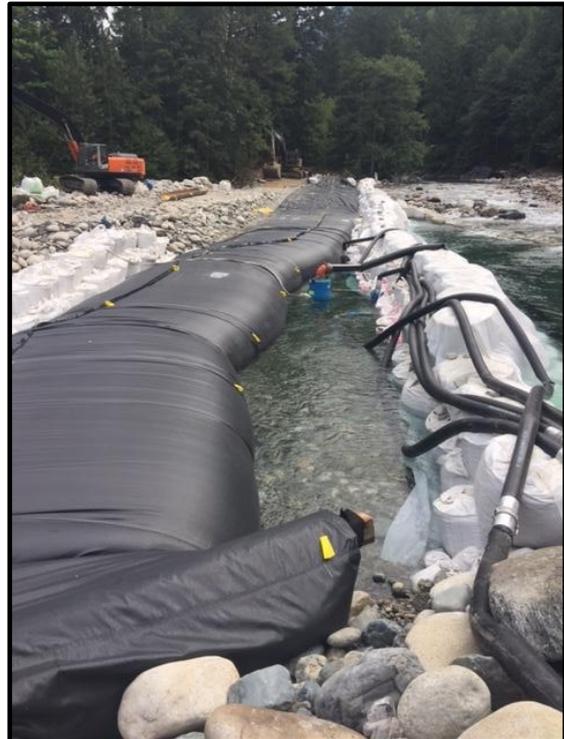
2.3.5 Site Cleanup and Post-Construction Activities

All construction materials and debris would be removed from the construction work areas and recycled or properly disposed of off-site. Caltrans would restore all areas temporarily disturbed by project activities, such as staging areas and access roads, to near or better than pre-construction conditions in accordance with applicable permits and Caltrans requirements. Caltrans would revegetate all previously disturbed areas with appropriate native species.

Figure 2-1 Example of a CA ST-75 Bridge Rail



Figure 2-2 Examples of a Temporary Creek Diversion System



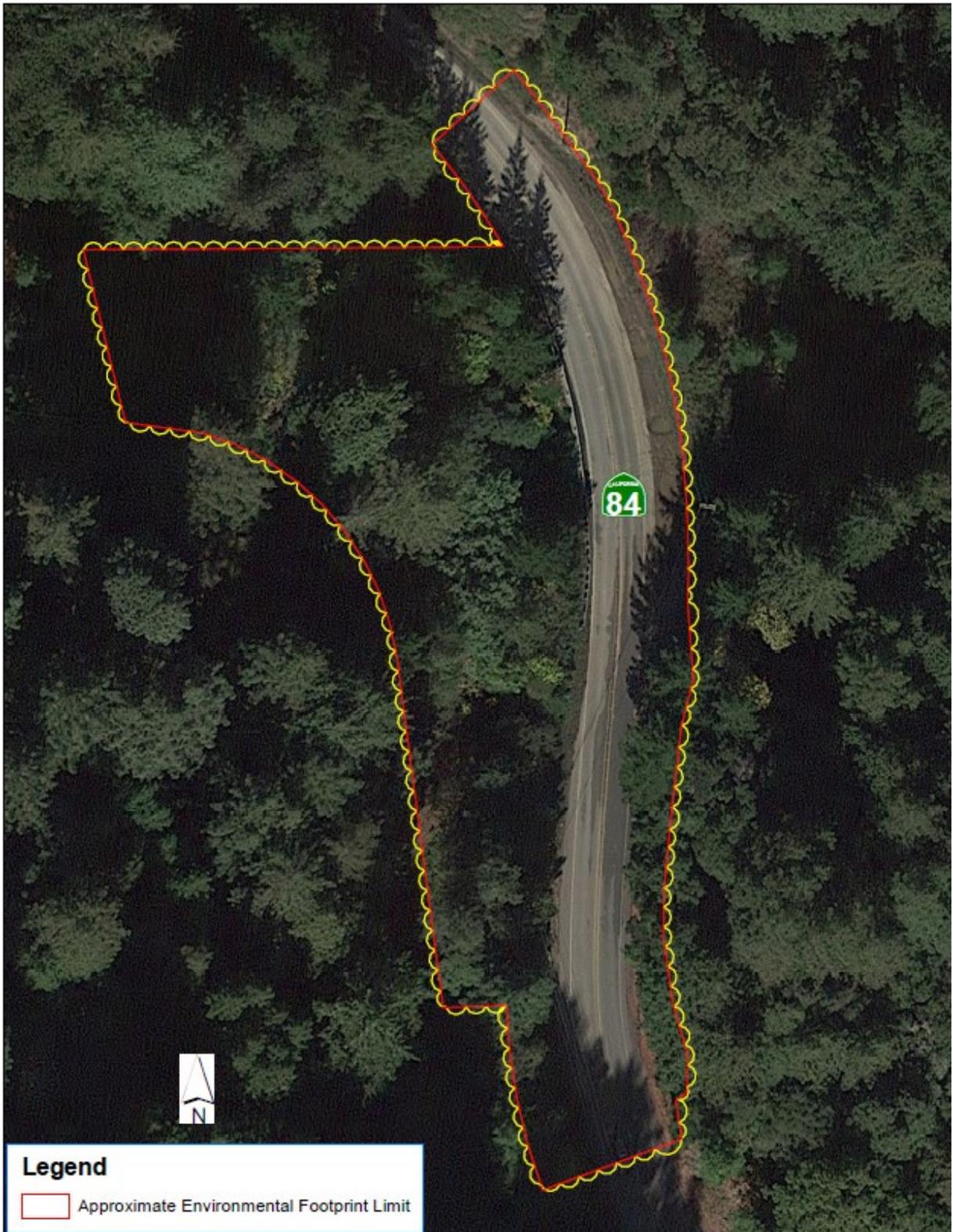
2.4 No Build Alternative

The No Build Alternative would not address the purpose and need of the Project. It would not address the present-day safety concerns and is inconsistent with Caltrans' goal to improve public safety.

2.5 Permits and Approvals Needed

Agency	Permits/Approvals	Status
U.S. Fish and Wildlife Service (USFWS)	Biological Opinion/Formal Section 7 consultation for threatened and endangered species	Consultation ongoing
California Department of Fish and Wildlife (CDFW)	Section 1602 Lake and Streambed Alteration Agreement	Following approval for the MND and issuance of the FONSI, a permit application would be submitted.
National Marine Fisheries Service (NMFS)	Biological Opinion/Formal Section 7 consultation for threatened and endangered species/Essential Fish Habitat consultation	Consultation ongoing
Regional Water Quality Control Board – San Francisco Bay (RWQCB)	Clean Water Act Section 401 Water Quality Certification	Following approval for the MND and issuance of the FONSI, a permit application would be submitted.
U.S. Army Corps of Engineers	Clean Water Act Section 404, Nationwide Permit 14	Following approval for the MND and issuance of the FONSI, a permit application would be submitted.

Figure 2-3 Environmental Footprint Map



Chapter 3 California Environmental Quality Act Evaluation

This chapter evaluates potential environmental impacts of the Project, as described in Chapter 2 as they relate to the CEQA checklist to comply with State CEQA Guidelines (Title 14 California Code of Regulations, Division 6, Chapter 3, Section 15091).

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project. Please see the full CEQA Environmental Checklist for additional information.

X	Aesthetics		Agriculture and Forestry		Air Quality
X	Biological Resources		Cultural Resources	X	Energy
	Geology/Soils	X	Greenhouse Gas Emissions	X	Hazards and Hazardous Materials
X	Hydrology/Water Quality		Land Use/Planning		Mineral Resources
	Noise		Population/Housing		Public Services
	Recreation	X	Transportation/Traffic		Tribal Cultural Resources
	Utility/Service Systems	X	Wildfire	X	Mandatory Findings of Significance

3.2 CEQA Environmental Checklist

This checklist (presented at the beginning of each resource section below in the form of a table listing the pertinent questions applicable to the resource and four columns where the degree of impact is indicated) identifies physical, biological, social, and economic factors that might be affected by the Project. In many cases, technical studies performed in connection with the Project indicate that there are no impacts to a particular resource. A “no impact” answer in the last column reflects this determination. The words “significant” and “significance” used throughout the checklist are related to CEQA impacts. The questions in this form are intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance.

As noted previously, Project Features, which may include both design elements of the Project and standardized measures that are applied to all or most Caltrans projects, such as BMPs and measures included in the Standard Plans and Specifications or as Standard Special Provisions, are considered to be an integral part of the Project and are considered prior to any significance determinations. A list of the proposed Project’s Project Features and AMMs can be reviewed in Appendix B.

3.2.1 Aesthetics

Except as provided in Public Resources Code Section 21099, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	NO	NO	YES	NO
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	NO	NO	YES	NO
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	NO	NO	YES	NO
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	NO	NO	YES	NO

The Caltrans Office of Landscape Architecture prepared the “Visual Impact Assessment: Slope Washout Repair” (VIA; Caltrans 2021a) for the Project. The findings of the VIA are analyzed as they apply to CEQA in this section.

The Project corridor is defined as the land that is visible from, adjacent to, and outside the highway right of way. The Project corridor is determined by topography, vegetation, and viewing distance. Within the Project corridor, the landscape is characterized by a narrow and winding forest road with natural, mature, mixed-evergreen trees and shrubs and hills. Nearby is the San Gregorio Creek riparian corridor which is marked by dense riparian trees.

a), b), and c) Less Than Significant Impact

The permanent changes most likely to be noticed by the travelling public would include any portions of the retaining wall that cannot be buried, the widened shoulder, and upgraded guardrail. In addition to the permanent changes, the traveling public would be exposed to temporary visual impacts due to construction activities, containment platforms, equipment storage, and one-way traffic control.

Permanent and temporary visual impacts of the Project would be limited by the steep topography of the Project corridor. Work would be done by accessing the San Gregorio Creek and would not be visible to the traveling public from the roadway. The steep topography of the Project corridor similarly limits outward views from the highway as well as views of the highway from adjacent areas, such as private properties upslope or downslope from the Project site. The retaining wall would be downslope of the highway, mostly buried, and revegetated. This project would not contribute to substantial visual changes.

Resources such as unique or outstanding trees, rock outcroppings, and historic buildings or other structures would not be adversely affected by the Project. Project elements that might otherwise present undesirable visual intrusions in this visual landscape would be made compatible with the Project corridor through implementation of avoidance and minimization measures AES-1 through AES-5 that can be found in Appendix B. The AMMs would minimize the degree of visual change within the Project area and maximize the extent to which the Project would blend in with the surrounding natural landscape.

Impacts to scenic vistas, scenic resources, and the visual character or scenic quality of the landscape in the Project corridor would be less than significant.

d) Less Than Significant Impact

The upgraded guard railing may present a new source of glare. However, the MGS proposed by the Project would have wooden posts and a matte treatment to reduce glare. The impact from any new sources of glare would be less than significant.

3.2.2 Agriculture and Forestry Resources

<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:</p>	<p>Significant and Unavoidable Impact</p>	<p>Less Than Significant with Mitigation Incorporated</p>	<p>Less-Than-Significant Impact</p>	<p>No Impact</p>
<p>a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?</p>	<p>NO</p>	<p>NO</p>	<p>NO</p>	<p>YES</p>
<p>b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?</p>	<p>NO</p>	<p>NO</p>	<p>NO</p>	<p>YES</p>
<p>c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?</p>	<p>NO</p>	<p>NO</p>	<p>NO</p>	<p>YES</p>
<p>d) Result in the loss of forest land or conversion of forest land to nonforest use?</p>	<p>NO</p>	<p>NO</p>	<p>NO</p>	<p>YES</p>
<p>e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to nonagricultural use or conversion of forest land to nonforest use?</p>	<p>NO</p>	<p>NO</p>	<p>NO</p>	<p>YES</p>

a), b), c), d), and e) No Impact

The Project would take place completely within Caltrans' right of way, which does not consist of any farmland. There would be no impact to agriculture and forest resources as a result of the Project. The Project would not include the conversion of farmland to non-agricultural use. The Project footprint does not contain land zoned for agricultural uses, land under the Williamson Act, or land zoned as forest land, timber land, or timberland production. There would be no loss or conversion of forest land to non-forest land, or any other changes to the existing environment that would convert farmland to non-agricultural use or forest land to non-forest use. There would be no impact to agriculture and forest resources.

3.2.3 Air Quality

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	NO	NO	NO	YES
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard?	NO	NO	NO	YES
c) Expose sensitive receptors to substantial pollutant concentrations?	NO	NO	NO	YES
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	NO	NO	NO	YES

a), b), c), and d) No Impact

The Project is exempt from requiring a conformity determination per 40 Code of Federal Regulations (CFR) 93.126 – Repair damage caused by natural disasters, civil unrest, or terrorist acts. This Project would not conflict with or obstruct implementation of the San Mateo General Plan, result in a cumulatively considerable net increase in any criteria pollutant, expose sensitive receptors to substantial pollutant concentrations, or result in other emissions that adversely affect a substantial number of people. Construction air pollutants are expected to be minimal to negligible. Potential impacts to air quality, including violation of air quality standards, criteria pollutants, exposure of sensitive receptors to pollutants, and creation of odors are not anticipated based on the scope of the proposed Project. Project Features AQ-1 and AQ-2 would provide for dust control and adherence to air pollution regulations, as found in Appendix B and would help ensure that there are no impacts from fugitive dust.

3.2.4 Biological Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service, or National Oceanic and Atmospheric Administration/National Marine Fisheries Service?	NO	YES	NO	NO
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	NO	YES	NO	NO
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	NO	YES	NO	NO
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	NO	YES	NO	NO
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	NO	NO	NO	YES
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	NO	NO	NO	YES

Caltrans has prepared a Natural Environmental Study (NES) for the Project (Caltrans 2022b). The following text summarizes and analyzes the information presented in the NES.

The Biological Study Area (BSA) includes the areas surveyed to identify, evaluate, and quantify the natural resources potentially affected by the Project footprint. The Project footprint is defined as the entire area of direct impacts including areas that could be affected by construction activities. The BSA includes a 350-foot buffer around the Project footprint and/or edge of pavement.

The BSA includes the highway prism, developed bare ground, redwood forest/riparian, and non-native disturbed areas. The BSA is in the Santa Cruz Mountains subsection of the Central California Coast ecological subregion. The land cover in the Project vicinity consists primarily of redwood forest in undisturbed areas interspersed with bare ground and ruderal areas adjacent to the highway and adjacent private driveways. San Gregorio Creek generally runs east to west but has a highly meandering character and runs adjacent to the roadway within the BSA.

A list of special-status wildlife and plant species with potential to occur in the Project area was compiled by querying databases from the U.S Fish and Wildlife Service (USFWS; USFWS 2021a), California Native Plant Society (CNPS) (CNPS 2021), California Natural Diversity Database (CNDDDB; CDFW 2021), and National Wetlands Inventory (USFWS 2021b). Each special-status wildlife and plant species on these separate lists was evaluated to determine its potential to occur within the Project's BSA. The NES fully evaluates all special-status plant and animal species with a potential to occur in the BSA.

Various studies were conducted in the preparation of this NES, including:

- General species reconnaissance survey
- A rare plant survey
- A tree inventory
- Wetlands and waters delineation

a) Less Than Significant Impact with Mitigation

Special-Status Plant Species

Special-status plants are considered by scientists and regulatory agencies to be sufficiently rare to warrant protection. The CNPS provides rankings to all plant species to classify their rareness. Environmental laws such as the Federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) provide protection to these species. Habitat within the BSA provides some potential for 5 special-status species to occur: Pacific grove clover (*Trifolium polyodon*), western leatherwood (*Dirca occidentalis*), white-flowered rein orchid (*Piperia candida*), Dudley's lousewort (*Pedicularis dudleyi*), and minute pocket moss (*Fissidens pauperculus*). There are no CNDDDB records of Pacific grove clover, white-flowered rein orchid, or Dudley's lousewort within 5 miles of the BSA. Records of western leatherwood and minute pocket moss within 5 miles date back as early as 1962 and some occurrences were documented as recent as 2013. There is only marginally suitable habitat for the remaining three species; microhabitat conditions like serpentine soils are lacking. Overall, it was determined that there is a low probability of these species occurring within the BSA.

No special-status plant species were observed during surveys. Caltrans would continue with an additional round of surveys in 2022 to account for seasonal variability. Project Features related to delineating ESAs and revegetation and AMMs both listed in Appendix B relating to special-status plant surveys would be implemented during construction. Compliance with these measures would ensure that effects to sensitive plants would be avoided or minimized. The impact would be less than significant.

Special-Status Wildlife Species

Special-status wildlife species, like special-status plants, are determined to be sufficiently rare to warrant protection by environmental laws and regulatory agencies. Habitat for the following species was observed in the BSA: California red-legged frog (*Rana draytonii*), Central California Coast steelhead (distinct population segment [DPS], *Oncorhynchus mykiss*), and Central California Coast Coho salmon (evolutionarily significant unit [ESU], *Oncorhynchus kisutch*). There is potential for marbled murrelet (*Brachyramphus marmoratus*), foothill yellow-legged frog (*Rana boylei*), Santa Cruz black salamander (*Aneides niger*), California giant salamander (*Dicamptodon ensatus*), western pond turtle (*Emys marmorata*), and Townsend's big eared bat (TBEB, *Corynorhinus townsendii*) to occur within the BSA. These nine species are discussed below.

California Red-legged Frog

The California red-legged frog is federally listed as threatened under FESA. All vegetation communities in the BSA could provide suitable upland and dispersal habitat for the species and the BSA overlaps with federally designated critical habitat. No ponds or wetlands were observed within the BSA, and the lack of emergent vegetation makes it unlikely the frog breeds within this stretch of San Gregorio Creek. However, the riparian corridor constitutes suitable dispersal habitat for the frog. Thus, there is some potential for the frog to occur and disperse through the BSA.

Due to the location of the Project footprint, impacts to potential red-legged frog habitat is unavoidable. A total of 0.07 acre of permanent impacts to red-legged frog aquatic and upland dispersal habitat are anticipated as a result of the placement of the new soldier pile wall. In addition, 0.18 acre of temporary impacts to frog habitat is anticipated as a result of TCDS installation, staging, and buried RSP installation. RSP installation would be constructed along the interface of the new wall. However, this impact is considered temporary because the hardscape elements would be covered with native sediment and replanted with native redwood forest/riparian trees and the remaining creek channel would be restored to a more westerly alignment. This revegetation would occur within one year of groundbreaking. Overall, habitat quality is expected to be enhanced by remediating ongoing scour and reducing sedimentation flows.

Pursuant to section 7 of FESA, Caltrans has determined that the Project may affect, and is likely to adversely affect the frog, and may affect, but is not likely to adversely affect, red-legged frog critical habitat. Project Features, amphibian-specific AMMs, and Mitigation Measure BIO-1 (all listed in Appendix B) would serve to avoid and minimize impacts to this species.

A Biological Assessment is being prepared pursuant to FESA and would be used to initiate section 7 consultation with USFWS. Section 7 consultation would be completed during the design phase of this project. Compliance with these measures would ensure that effects to the California red-legged frog are minimized to the greatest extent practicable and the impact would be less than significant.

Central California Coast (CCC) DPS Steelhead

The CCC steelhead is federally listed as a threatened species. San Gregorio Creek, within the BSA, likely provides suitable migration and rearing habitat for CCC DPS steelhead. Critical habitat was designated by the NMFS on May 5, 1999. San Gregorio Creek within the BSA is designated critical habitat and Essential Fish Habitat (EFH).

Although construction would occur during the dry season, the section of San Gregorio Creek running through the BSA is perennial, which means that the creek typically has water flowing in year-round. Therefore, there is a potential for direct take of CCC DPS steelhead. "Take" as defined by the Endangered Species Act, is to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The Project would result in unavoidable impacts because the scour along the secant wall occurs within EFH and CCC DPS steelhead critical habitat. The Project would temporarily impact 0.08 acre of steelhead critical habitat. Temporary impacts would result from TCDS installation, and the use of machinery in the creek bed. The Project would permanently impact 0.03 acre of steelhead critical habitat. Although hardscape would be installed in the creek bed, these impacts are considered temporary because the structures would be covered with native substrate that is naturally occurring in the channel. Additionally, to address the minor reduction in total width of the creek channel, it would be regraded and enhanced with other aquatic features to achieve the highest level of habitat value for fish species with respect to spawning and rearing habitat.

Caltrans has determined that the Project may affect, and is likely to adversely affect, the CCC DPS steelhead and may affect, but is likely not to adversely affect CCC DPS steelhead critical habitat. With implementation of Project Features, fish-related AMMs, and Mitigation Measure BIO-2 all listed in Appendix B, impacts to CCC DPS Steelhead would be less than significant.

Central California Coast ESU Coho Salmon

The CCC Coho salmon is federally listed as endangered under FESA. San Gregorio Creek within the BSA likely provides suitable migration and rearing habitat for CCC ESU Coho Salmon. San Gregorio Creek within the BSA is designated critical habitat and Essential Fish Habitat (EFH).

Despite the fact construction activities would occur during the dry season, the section of San Gregorio Creek running through the BSA is perennial, which means that the creek typically has water flowing in year-round. Therefore, there is a potential for direct take of CCC ESU Coho Salmon. The Project would result in unavoidable impacts because the scour along the secant wall occurs within EFH and CCC ESU Coho Salmon critical habitat. The Project would temporarily impact 0.08 acre of CCC ESU Coho Salmon critical habitat. Temporary impacts would result from the TCDS installation, and the use of machinery in the creek bed. The Project would permanently impact 0.03 acre of CCC ESU Coho Salmon critical habitat. Although hardscape would be installed in the creek bed, these impacts are considered temporary because the structures would be covered with native sediment that is naturally occurring in the channel. Additionally, to address the minor reduction in total width of the creek channel, it would be regraded and enhanced with other aquatic features to achieve the highest level of habitat value for fish species with respect to spawning and rearing habitat.

Caltrans has determined that the Project may affect, and is likely to adversely affect, the CCC ESU Coho Salmon and may affect, but is likely not to adversely affect CCC ESU Coho Salmon critical habitat. The scour pool would be repaired, but overall creek habitat and waters of the US would be restored at a 1:1 ratio. Caltrans would increase the ratio to 3:1 for offsite work. This is referenced in Mitigation Measure BIO-4 listed in Appendix B.

With Project Features, fish-related AMMs, and Mitigation Measure BIO-3 and BIO-4 listed in Appendix B, impacts to CCC ESU Coho Salmon would be less than significant.

Marbled Murrelet

Marbled murrelet (*Brachyramphus marmoratus*) is federally listed as threatened and state listed as an endangered. Based on a literature review, reconnaissance-level surveys during site visits, and tree surveys, the BSA has the potential to support habitat where murrelet may occur. The BSA is unlikely to support murrelet nesting.

In the BSA, increased noise generated primarily by excavators, large vehicles, and chainsaw operation could result in effects to individuals. There would be no loss or long-term degradation or loss of marbled murrelet habitat functions and values. Take by harassment of individuals due to noise disturbance, although possible, is very unlikely to occur due to the work window delineated in the bird protection project feature in Appendix B.

Caltrans has determined that the Project may affect, but is not likely to adversely affect, the marbled murrelet and may affect, but is not likely to adversely affect marbled murrelet critical habitat. Project Features and AMMs found in Appendix B would ensure that effects to the marbled murrelet are minimized to the greatest extent practicable and the impact would be less than significant.

Foothill Yellow-legged Frog

The West/Central Coast clade of the foothill yellow-legged frog (*Rana boylei*) was listed as endangered under the California Endangered Species Act (CESA) on March 10, 2020. The BSA is within the recognized range of the frog, and the CNDDDB identifies several documented occurrences of the frog within 3 miles of the BSA (CDFW 2021). The most recent records for the yellow-legged frog in the vicinity is from 1999, but the species is presumed extant within the Project area. The Project vicinity likely supports quality habitat for the species. Furthermore, the partially shaded creek channel with a variable-sized array of cobblestones, as well as shallow, slow-moving flow through the portion of San Gregorio Creek within the BSA all present niche components known to support the foothill yellow-legged frog.

The perennial nature of San Gregorio Creek indicates there is some potential for direct impacts to the frog. A total of 0.07 acre of permanent impacts to FYLF aquatic and upland dispersal habitat are anticipated as a result of the placement of the new soldier pile wall. In addition, 0.18 acres of temporary impacts to FYLF habitat are anticipated as a result of the TCDS installation, staging, and buried RSP installation. RSP installation would be constructed along the interface of the new wall; however, this impact is considered temporary because the hardscape elements would be covered with native substrate and the remaining creek channel restored to its current condition. The scour pool would be repaired, but overall creek habitat and waters of the US would be restored at a 1:1 ratio. Caltrans would increase the ratio to 3:1 for offsite work. This is referenced in Mitigation Measure BIO-4 listed in Appendix B. The use of preconstruction surveys and relocation protocols as specified in Project Features found in Appendix B would avoid adverse impacts to individuals that may be present during planned dewatering activities and the impact would be less than significant.

Santa Cruz Black Salamander

The Santa Cruz black salamander (*Aneides niger*) is listed as a California Species of Special Concern. There is potentially suitable habitat in the BSA in the form of a damp, humid forest environment next to a cool, rocky stream that includes fallen logs and surface debris for cover. There is one CNDDDB occurrence of the species within 3 miles of the BSA that dates to 1939.

The proposed Project may impact potentially suitable salamander habitat. Permanent impacts to habitat include the placement of the soldier pile wall immediately adjacent to aquatic habitat and the removal of trees and vegetation. Placement of buried RSP would be limited to a single streambank along the base of the new wall. Existing conditions of the highly eroded compromised stream bank and limited subcanopy vegetation confers a nominally small area that could potentially be used by the salamander. In-stream work would be limited in duration, consistent with the dry season and impacted areas would be restored to existing elevations after construction completion. Tree and vegetation removal would not exclude passage of the salamander through the San Gregorio Creek riparian corridor, and plants commensurate with the existing vegetation alliance would be replanted onsite. Potential temporary impacts include disturbance from construction equipment (dust and noise), impacts to water quality, and placement of the temporary creek diversion system. If the salamander occurs in the Project footprint during construction, there would be potential for injury or mortality caused by work activities. The avoidance and minimization efforts outlined in Project Features listed in Appendix B for the special-status amphibians, including the red-legged frog, are also suitable for protecting the salamander and the impact would be less than significant.

California Giant Salamander

The California giant salamander (*Dicamptodon ensatus*) is listed as a California Species of Special Concern. Compatible habitat conditions are present in the BSA in the form of a cool, rocky stream in a humid coastal forest, with plenty of areas for the species to find cover. There are four CNDDDB occurrences of this species within 3 miles of the BSA, including one that is non-specific and dates back to 1916. The creek may be a suitable location for California giant salamander to reproduce due to the presence of water-logged debris in the form of fallen logs and branches. Furthermore, the dense subcanopy may also provide habitat for larvae to seek refuge and forage. Terrestrial adult giant salamanders have the potential to use upland habitats surrounding the creek and could find cover under fallen logs, rocks, or other forest debris.

The proposed Project may impact potentially suitable salamander habitat. Permanent impacts to habitat include the placement of the soldier pile wall and buried RSP immediately adjacent to aquatic habitat and the removal of trees and vegetation. However, habitat suitability in the area of direct impacts includes a highly eroded compromised stream bank and limited subcanopy vegetation. As stated in the BIO AMMs, in-stream work would be limited in duration and done during the dry season. All impacted areas would be restored to existing elevations after construction completion. Tree and vegetation removal would not exclude passage of salamander through the creek corridor. All disturbed areas would be revegetated using native plant species currently found onsite. Temporary impacts include disturbance from construction equipment (dust and noise), impacts to water quality, and TCDS installation. If California giant salamander occurs in the Project footprint during construction, there would be potential for injury or mortality caused by work activities. Implementation of Project Features and AMMs listed in Appendix B would substantially reduce the risk of this occurring and the impact would be less than significant.

Western Pond Turtle

The western pond turtle (*Emys marmorata*), a California Species of Special Concern, is one of two freshwater turtles native to California. Suitable aquatic and upland habitat for the western pond turtle occurs within the BSA, and there is one documented CNDDDB occurrence within 3 miles of the site. During dry season surveys, Caltrans biologists observed that San Gregorio Creek retained standing water and a large, deep pool which suggests this site could be occupied year-round by the turtle. However, the dense canopy of the redwood forest at the creek and lack of open, terrestrial upland habitat the species requires for breeding, likely limits

the habitat suitability for the turtle in the BSA. The turtle may use the creek corridor for dispersal through the Project site but is unlikely to occur year-round in the BSA.

This Project is unlikely to directly impact individual pond turtles or suitable breeding and upland habitat. Additionally, construction would be conducted during the dry season only, further limiting the potential for this Project to affect the turtle.

A total of 0.07 acre of permanent impacts to WPT aquatic and upland dispersal habitat are anticipated as a result of the placement of the new soldier pile wall. In addition, 0.18 acre of temporary impacts to WPT habitat are anticipated as a result of TCDS installation, staging, and buried RSP installation. RSP installation would be constructed along the interface of the new wall; however, this impact is considered temporary because the hardscape elements would be covered with native sediment and planted with redwood forest/riparian trees and the remaining creek channel restored to a more westerly alignment. This replanting would occur within one year of groundbreaking. Overall, habitat quality is expected to be enhanced by remediating ongoing scour and reducing sedimentation flows.

These indirect effects would all be avoided through the implementation of Project Features and the reptile related AMMs found in Appendix B. The project would not create any new permanent barriers to dispersal along the creek and the impact would be less than significant.

Townsend's Big Eared Bat

One special status bat species, Townsend's big-eared bat (*Corynorhinus townsendii*), was identified as having some potential to forage within the BSA. This species is listed as a California Species of Special Concern.

Tree removal would be minimized, and all trees being removed do not contain appropriate features, such as crevices or loose bark, that would support bat roosting. Therefore, there is no anticipated loss of potential roosting. The Project has potential for minor shifts in foraging patterns, but with the use of the Project Features and AMMs, including Bat Protection in Appendix B, minimal direct and no indirect impacts to bat species are anticipated and the impact would be less than significant.

b) Less Than Significant Impact with Mitigation

Construction activities would include the creek channel and adjacent creek banks resulting in some permanent impacts to riparian vegetation.

Access to the construction area would be achieved by craning in of equipment from the roadway. This would minimize the need for vegetation clearing to perform work in the creek bed. Despite this, the length of the wall adequate to protect the structural integrity of the existing secant wall would result in .03 acre of permanent impacts to redwood forest/ riparian zone vegetation.

Caltrans has worked to minimize tree removal and has determined which riparian trees would be potentially impacted by the Project. Due to location, design constraints, and construction activities, the removal of at least fourteen riparian trees with diameter at breast height (dbh) of greater than 2 inches (in.) would be required. The species of trees include eight red alders (*Alnus rubra*); five big leaf maple (*Acer macrophyllum*); and one pine species (*Pinus* sp.). Trees would be replaced within the Project footprint at a 3:1 ratio for any native redwood forest/

riparian zone trees removed. With Project Features, AMMs, and Mitigation Measure BIO-4 and BIO-5 listed in Appendix B, adverse direct impacts to riparian vegetation would be less than significant.

c) Less Than Significant Impact with Mitigation

A site assessment and ordinary high-water mark (OHWM) delineation identified aquatic features within the Project footprint. San Gregorio Creek constitutes a "navigable" water or tributary to navigable waters, therefore, they are USACE jurisdictional waters of the U.S. No wetlands were observed within the BSA.

Based on the location and scope of the proposed Project in jurisdictional creeks, impacts to waters of the U.S. are unavoidable.

Permanent direct impacts to the creek will result from installation of the soldier pile wall, backfilling wall with cellular concrete, and/or placing RSP (or other bioengineered bank stabilization elements and creek training measures) along creek banks. The Project will result in approximately 0.03 acre of permanent fill to jurisdictional waters; new fill will likely occur in the form of buried RSP in order to construct a new creek bank in front of soldier pile wall. In addition, approximately 0.08 acre of temporary direct impacts will result from construction staging and dewatering/temporary creek diversion activities in the creek channel. Following construction, the creek channel will be restored in a manner that enhances the quality of fish habitat throughout the project limits, while simultaneously protecting the new retaining wall from future water infiltration that could undermine its structural integrity and potential service life.

With the anticipated extent of tree removal there is potential for increased turbidity in San Gregorio Creek due to soil disturbance and storm water runoff. Increased turbidity could adversely affect the quality of aquatic resources as well as negatively affect vegetation in the area, further degrading habitat. Accidental spills of materials used during construction (e.g., oils, transmission and hydraulic fluids, fuel) could enter aquatic features due to runoff. The release of pollutants into these aquatic features could adversely affect the resource and the quality of habitat it provides for sensitive plants and wildlife. The implementation of storm water/erosion control BMPs, as detailed in the Project Features in Appendix B, will prevent runoff and pollutants from entering these aquatic features. With the use of AMMs in Appendix B, no indirect impacts to aquatic features are anticipated.

Due to the fact that the Project will have a net benefit to the creek by halting scour, the 0.03 acre of permanent impacts to waters of the U.S. will be mitigated at a 1:1 ratio on-site. All temporarily impacted areas will be restored to preconstruction contours and functions to the maximum extent feasible. At the location of the new soldier pile wall, restoring the creek bank would involve installing RSP and burying it with native sediment and a commensurate assortment of riparian zone trees will be planted on top to restore the creek bank. This mitigation proposal is subject to change based on coordination with resource agencies.

Implementation of Project Features and AMMs in Appendix B, including ESA fencing, Inclement Weather Restriction, Creek Diversion Plan, Water Quality/Erosion Control BMPs, Construction Site BMPs, and Dry Season Work Window would avoid and/or minimize impacts to aquatic resources within the BSA and the impact would be less than significant.

d) Less Than Significant Impact with Mitigation

Potential impacts and proposed mitigation measures for riparian habitat are discussed in responses to items above. The proposed Project will affect essential fish habitat (EFH) for Pacific salmon managed under the Magnuson-Stevens Fishery Conservation and Management Act (MSA).

Project Features, fish related AMMs, Mitigation Measures BIO 3, 4, and 6 listed in Appendix B would minimize EFH impacts within the BSA, and the impact would be less than significant.

e) No Impact

There are no local ordinances that apply to this Project. This Project would not conflict with any local policies or ordinances that protect biological resources. There would be no impact.

f) No Impact

The Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.

3.2.5 Cultural Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	NO	NO	NO	YES
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	NO	NO	NO	YES
c) Disturb any human remains, including those interred outside of formal cemeteries?	NO	NO	NO	YES

Caltrans prepared a memorandum on cultural compliance for the Project titled “Office of Cultural Resource Studies (OCRS) Section 106 Review for Storm Damage Permanent Restoration Project on State Route 84, Post Mile 7.8, in San Mateo County, California” (Caltrans 2021f). The cultural study was carried out in a manner consistent with Caltrans’ regulatory responsibilities under the January 2014 *First Amended Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it pertains to the Administration of the Federal-Aid Highway Program in California* (Programmatic Agreement).

a), b), and c) No Impact

The OCRS review consisted of a detailed search of records, maps, plans, and digital files found in Caltrans’ Cultural Resources Database, and based on the results of the review, Caltrans has determined that the Project has no potential to affect cultural resources and is exempt from further review pursuant to the Programmatic Agreement, Stipulation VII, “Screened Undertakings.” The review also determined that there are no historical resources present for the purposes of CEQA. Project Features CULT-1 and CULT-2 found in Appendix B would help ensure there would be no impact to cultural resources.

3.2.6 Energy

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	NO	NO	YES	NO
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	NO	NO	NO	YES

a) Less Than Significant Impact

The Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy. During construction, BMPs would be implemented for energy efficiency of construction equipment. During Project operation, energy consumption would be limited to routine maintenance. The impact would be less than significant

b) No Impact

The Project would not conflict with a state or local plan for renewable energy or energy efficiency. There would be no impact.

3.2.7 Geology and Soils

Would the proposed project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	NO	NO	NO	YES
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	NO	NO	NO	YES
ii) Strong seismic ground shaking?	NO	NO	NO	YES
iii) Seismic-related ground failure, including liquefaction?	NO	NO	NO	YES
iv) Landslides?	NO	NO	NO	YES
b) Result in substantial soil erosion or the loss of topsoil?	NO	NO	NO	YES
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	NO	NO	NO	YES
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	NO	NO	NO	YES
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?	NO	NO	NO	YES
f) Directly or indirectly destroy a unique paleontological resource or site or a unique geologic feature?	NO	NO	NO	YES

a(i) No Impact

While the Project is near the San Andreas fault, it is not within an earthquake fault zone. There would be no impact.

a(ii) No Impact

Due to the Project's proximity to the San Andreas fault, the Project area has the potential to experience strong ground shaking. The Project would have no direct or indirect impact on the

potential for ground shaking or on the public's risk for loss, injury, or death from seismic events. Caltrans would design the Project to resist ground-shaking associated with the nearby fault. There would be no impact.

a(iii) No Impact

The Project is not located in an area that is susceptible to liquefaction. This Project would not increase the risk of loss, injury, or death due to liquefaction, so there would be no impact.

a(iv) No Impact

The Project is not located in an area that is susceptible to landslides. This Project would not increase the risk of loss, injury, or death due to landslides, so there would be no impact.

b) No Impact

Caltrans would design the Project so that no erosion or loss of topsoil would occur as a result, either directly or indirectly, of the Project. Project Feature WQ-1 would be implemented to reduce any erosion or loss of topsoil that may occur. There would be no impact.

c) No Impact

The Project is not located in a geologic unit or soil that is unstable or that would become unstable because of the Project. Additionally, this Project would not increase the risk of on- or off-site landslides, lateral spreading, subsidence, liquification, or collapse. There would be no impact.

d), e), and f) No Impact

The Project is not located on expansive soil (as defined in Table 18-1-B of the Uniform Building Code [1994]), and there are no septic tanks, alternative wastewater disposal systems, or any other solid waste disposal facilities planned as part of the Project. Additionally, the Project is not located in an area that contains a geologic unit that is paleontologically sensitive. The discovery or destruction of any unique paleontological resources are not anticipated. There would be no impact.

3.2.8 Greenhouse Gas Emissions

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	NO	NO	YES	NO
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	NO	NO	YES	NO

a) and b) Less Than Significant Impact

While the Project would not result in any increase in operational greenhouse gas (GHG) emissions, it is anticipated that the Project would result in GHG emissions during construction.

Operational GHG emissions are emitted through the regular daily use of the highway, and as the Project would not increase the capacity of the highway, operational emissions would not increase. During Project operation, energy consumption would be limited to routine maintenance.

Construction GHG emissions would result from material processing, on-site construction equipment, and traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction.

In addition, with innovations such as longer pavement lives and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

The analysis focused on vehicle-emitted GHGs and CO₂ emissions, because CO₂ is the single most important GHG pollutant due to its abundance when compared with other vehicle-emitted GHGs.

Construction-related GHG emissions were calculated using the Road Construction Emissions Model, version 9.0.0, provided by the Sacramento Metropolitan Air Quality Management District. It was estimated that for a construction duration of 9 months, the total amount of CO₂ produced during the Project's construction would be 197 tons. Total CO₂e emissions (CO₂, CH₄, and N₂O) would be 211 metric tons.

All construction contracts include Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, which require contractors to comply with all laws applicable to the Project and to certify they are aware of and would comply with all California Air Resource Board (ARB) emission reduction regulations; and Section 14-9.02, Air Pollution Control, which requires contractors to comply with all air pollution control rules, regulations, ordinances, and statutes.

Certain common regulations, such as equipment idling restrictions, that reduce construction vehicle emissions also help reduce GHG emissions.

The Project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. With implementation of Project Features and AMM-TRANS-1: Develop and Implement a Traffic Management Plan found in Appendix B, the impact would be less than significant.

3.2.9 Hazards and Hazardous Materials

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	NO	NO	NO	YES
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	NO	NO	NO	YES
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	NO	NO	NO	YES
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	NO	NO	NO	YES
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	NO	NO	NO	YES
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	NO	NO	YES	NO
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	NO	NO	YES	NO

a) and b) No Impact

All aspects of the Project associated with removal, storage, transportation, and disposal of hazardous material would be done in accordance with the appropriate California Health and Safety Code. Handling of hazardous materials would comply with Caltrans Standard Specification 14-11, Hazardous Waste and Contamination, which outlines handling, storing, and disposing of hazardous waste. Caltrans Standard Specifications BMPs would be implemented to prevent spills or leaks from construction equipment and from storage of fuels, lubricants, and solvents. There are no anticipated impacts.

c) No Impact

There are no existing or proposed schools within a quarter mile of the Project area. There would be no impact.

d) No Impact

Soil sample analytical data collected in this general area of SR 84 shows that there are little to no contamination concerns, they are similar to background concentrations, and further site investigations for soil lead would not be needed (Caltrans 2021e). There would be no impact.

e) No Impact

There are no airports or airstrips in the Project vicinity. There would be no impact.

f) Less Than Significant Impact

Emergency Evacuation Plans from the La Honda Fire Brigade plot evacuation routes from the community of La Honda through the Project area to the evacuation center in Pescadero. In the event of any emergency that prompts the evacuation of La Honda, Caltrans would coordinate with first responders to facilitate evacuation efforts through the Project area. There would be a less than significant impact.

g) Less Than Significant Impact

The La Honda Fire Brigade serves the Project area which is located in a moderate fire hazard severity zone (CAL FIRE 2007). The Project does not have permanent features that would expose people or structures to risk of loss, injury, or death involving wildland fires. AMM TRANS-1, found in Appendix B, would reduce fire risk to local residents and the traveling public during construction to less than significant.

3.2.10 Hydrology and Water Quality

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	NO	NO	YES	NO
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	NO	NO	YES	NO
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	NO	NO	NO	YES
(i) result in substantial erosion or siltation on- or off-site;	NO	NO	NO	YES
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	NO	NO	NO	YES
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	NO	NO	NO	YES
(iv) impede or redirect flood flows?	NO	NO	NO	YES
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	NO	NO	NO	YES
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	NO	NO	NO	YES

Caltrans investigated impacts to hydrology and water quality and prepared the *Hydraulics Recommendation and Estimates* (Caltrans 2021b) and *Water Quality Study* (Caltrans 2021a). This section summarizes the findings of that review.

The Project is located within the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (Region 2), which is responsible for implementation and enforcement of state and federal laws and regulations concerning water quality.

This Project is within the San Mateo Hydrologic Unit, San Gregorio Creek Area, and Sub-Area 202.30. The Project is within the San Gregorio Creek – Frontal Pacific Ocean Watershed and the Lower San Gregorio Creek Subwatershed. The receiving waterbody in the Project area is San Gregorio Creek.

a) Less Than Significant Impact

Water quality impacts that may result from this Project include increased sediment discharge from approximately 0.50 acre of disturbed soil area and increased runoff from approximately 0.40 acre of new impervious surface. In addition, impacts to water quality during construction may include oil and grease from vehicles and construction equipment, sanitary wastes, chemicals used for equipment, and litter. With implementation of Project Feature WQ-1, found in Appendix B, the Project would not substantially degrade surface or groundwater quality. In addition, the Project would not substantially violate water quality standards or waste discharge requirements. Impacts would be less than significant.

b) Less Than Significant Impact

The Project would require dewatering and a creek diversion system for construction. Details of the diversion system would be further developed during the design phase. Since the project does not exceed the threshold of one acre of new impervious surface, post-construction stormwater treatment BMPs would not be required for this project. Any impacts to groundwater that may occur from dewatering would be temporary and would not affect the groundwater recharge rate of the Project area after construction is completed. Any potential impact would be less than significant.

c) (i), (ii), and (iii) No Impact

The Project would add 0.40 acre of net new impervious surfaces, which would change the existing drainage pattern of the Project area. This additional impervious surface area would not result in substantial erosion, siltation, or substantially increase the rate or amount of surface runoff resulting in flooding on site or off site, create or contribute runoff exceeding the capacity of existing or planned stormwater drainage systems or provide additional sources of polluted runoff. The Project proposes to replace the existing storm duct in the Project area and would be designed using Caltrans standards to accommodate the increased surface runoff. With the improved drainage facilities, there would be no impact.

c) (iv) and d) No Impact

According to the Flood Insurance Rate Map 06081C0391E, the Project is located in an area denoted as a regulatory floodway with a base flood elevation of 293.2 feet. A regulatory floodway refers to the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the base flood without cumulatively increasing the water surface elevation more than 1 foot. Development in these floodways must be regulated to ensure that there are no increases in upstream flood elevations. The proposed work within San Gregorio Creek is to permanently repair the eroded bank and the realignment of the creek would not reduce capacity or increase flood/water surface elevations. The Project is not located in a tsunami or seiche zone and there is no risk of pollutants being released due to Project inundation or the redirection of flood flows. There would be no impact.

e) No Impact

This Project would not conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan. There would be no impact.

3.2.11 Land Use and Planning

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Physically divide an established community?	NO	NO	NO	YES
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	NO	NO	NO	YES

a) No Impact

The Project location is in a rural area of San Mateo County and does not have any potential to physically divide an established community. There would be no impact.

b) No Impact

The Project would be generally consistent with all applicable land use plans, policies, and regulations. The Project would not change the current land use of the sites. Furthermore, the Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect.

3.2.12 Mineral Resources

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	NO	NO	NO	YES
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	NO	NO	NO	YES

a) and b) No Impact

The Project does not occur in a known mineral resource zone. Therefore, no impacts on mineral resources would result from the Project.

3.2.13 Noise

Would the project result in:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	NO	NO	NO	YES
b) Generation of excessive groundborne vibration or groundborne noise levels?	NO	NO	NO	YES
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	NO	NO	NO	YES

a), b), and c) No Impact

The Project would not add a new traffic lane or substantially alter the roadway alignment or increase ambient noise levels greater than established standards. Construction noise would be temporary and would be within acceptable levels for construction activities. There would be no generation of excessive groundborne vibration or groundborne noise levels. This Project is not located within the vicinity of a private airstrip or an airport land use plan. There would be no impact.

3.2.14 Population and Housing

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	NO	NO	NO	YES
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	NO	NO	NO	YES

a) and b) No Impact

The Project would not induce population growth because it does not increase the capacity of SR 84, remove barriers to future growth, or increase population or housing growth (or demand for new housing, utilities, or public services). The Project would not induce substantial population growth, displace housing, or displace people; therefore, there would be no impact to population and housing.

3.2.15 Public Services

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
Fire protection?	NO	NO	NO	YES
Police protection?	NO	NO	NO	YES
Schools?	NO	NO	NO	YES
Parks?	NO	NO	NO	YES
Other public facilities?	NO	NO	NO	YES

a) No Impact

The Project would not result in the substantial alteration of government facilities in the Project area, such as fire and police protection, schools, parks or other public facilities, nor trigger the need for new government facilities or alter the demand for public services. A TMP would be prepared (see AMM TRANS-1 in Appendix B) during the design phase to minimize impacts on first responders and response times. There would be no impact.

3.2.16 Recreation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	NO	NO	NO	YES
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	NO	NO	NO	YES

a) No Impact

The Project would not directly or indirectly increase the use of existing recreational facilities such that substantial deterioration of the facilities would occur. There would be no impact.

b) No Impact

There are no recreational facilities in the Project area, and the Project would not require the construction or expansion of recreational facilities. There would be no impact.

3.2.17 Transportation

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	NO	NO	NO	YES
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	NO	NO	YES	NO
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	NO	NO	NO	YES
d) Result in inadequate emergency access?	NO	NO	YES	NO

a) No Impact

The project would not result in any conflicts with a program, plan, ordinance or policy related to the transportation system. As discussed in AMM TRANS-1 found in Appendix B, a Traffic Management Plan (TMP) would be developed to address roadway impacts. There would be no impact.

b) Less Than Significant Impact

This Project is consistent with CEQA Guidelines section 15064.3, subdivision (b) which relates to induced demand and vehicle miles traveled (VMT). The Project would have no impact on VMT since it is not a capacity increasing Project. Under section 15064.3, subdivision (b), transportation Projects that have no impact on VMT should be presumed to cause a less than significant transportation impact.

c) No Impact

This Project would maintain all existing nonstandard highway features, including design speed, lane width, curve radius, cross slope super elevation rate, maximum grade, and sight distance. Throughout the limits of the Project, nonstandard four-foot shoulders would be provided to facilitate cyclists. The addition of 4-foot shoulders throughout the Project area would increase the geometric safety of the highway, providing increased room for cyclists and recovery room for errant vehicles. The Project would upgrade guardrails within the Project limits to MGS, which would increase the safety of the highway by absorbing impacts from errant vehicles and limiting the ability of errant vehicles to impact fixed objects outside of the highway prism. The Project would not increase hazards due to geometric design features or incompatible uses, so there would be no impact.

d) Less Than Significant Impact

Under the TMP (see AMM TRANS-1 in Appendix B), medical and emergency vehicles would be able to continue to use routes in the local area to serve fire, medical, and law enforcement purposes. Flaggers would give priority to emergency vehicles. The impact would be less than significant.

3.2.18 Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	NO	NO	NO	YES
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	NO	NO	NO	YES

a) and b) No Impact

Native American consultation under Section 106 of the National Historic Preservation Act and CEQA, specifically Public Resources Code 21080.3.1 and Chapter 532 Statutes of 2014 (AB 52) was initiated on September 25, 2020, with the following tribal groups and individuals with ancestral connections to the Project area (including those identified by the Native American Heritage Commission (NAHC) on September 23, 2020): Chairperson Irenne Zwierlein, Amah Mutsun Tribal Band of Mission San Juan Bautista, Chairperson Tony Cerda, Costanoan Rumsen Carmel Tribe, Canyon Sayers-Roods, Chairperson Ann Marie Sayers, Indian Canyon Mutsun Band of Costanoan, Monica Arellano, Muwekma Ohlone Indian Tribe of the SF Bay Area, and Andrew Galvan, the Ohlone Indian Tribe. Follow-up attempts were made to each contact on November 16, 2020. No responses have been received to date. In addition, no cultural resources were identified in the record search results from the NAHC’s Sacred Lands File. Project features listed in Appendix B would ensure that there would be no impact.

3.2.19 Utilities And Service Systems

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	NO	NO	NO	YES
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	NO	NO	NO	YES
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	NO	NO	NO	YES
d) Generate solid waste in excess of State or local standards or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	NO	NO	NO	YES
e) Comply with federal, State, and local management and reduction statutes and regulations related to solid waste?	NO	NO	NO	YES

a), b), c), d), and e) No Impact

There are no utilities within the Project area and no need relocations would be required. Water needs would be provided by use of water trucks and wastewater treatment services. Solid waste would not be generated in excess of state and local standards and would comply with all applicable statutes. There would be no impact.

3.2.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	NO	NO	YES	NO
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	NO	NO	NO	YES
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	NO	NO	NO	YES
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	NO	NO	YES	NO

The Project work area is entirely within state responsibility areas and is not located on lands classified as very high fire severity (CAL FIRE 2007).

a) Less Than Significant Impact

A TMP (AMM-TRANS-1 found in Appendix B) would be developed during the design phase that would identify traffic diversion/staging and alternative routes. Emergency response times are not anticipated to change during construction because the TMP would provide measures to ensure priority for emergency vehicles during one-way traffic control. The TMP would provide instructions for response and evacuation in the event of an emergency. In addition, this Project would not conflict with any other emergency response or evacuation plan. The impact would be less than significant.

b) and c) No Impact

The Project proposes to install a soldier pile retaining on the bank of San Gregorio Creek. It require the installation of associated infrastructure that would exacerbate fire risk. There would be no impact.

d) Less Than Significant Impact

The Project is in an area that is currently experiencing continual slope movement. The Project is designed to prevent further slope movement caused by natural disasters. Storm water systems would transport highway surface runoff and uphill flows through the Project area, downslope

from the project. These systems would be designed to Caltrans standards and would not cause downslope flooding or landslides. There would be a less than significant impact.

3.2.21 Mandatory Findings of Significance

Mandatory Findings of Significance	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	NO	NO	YES	NO
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	NO	NO	NO	YES
c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly?	NO	NO	NO	YES

a) Less Than Significant Impact

The Project would not substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or substantially reduce the number of or restrict the range of a rare or endangered plant or animal. The proposed Project could result in temporary construction-related impacts on rare, threatened, and endangered species. The Project has the potential to impact CRLF upland habitat and aquatic resources. With implementation of the Project Features and AMMs summarized in Appendix B, these impacts would be reduced to a less than significant impact. The Project would not eliminate important examples of the major periods of California history or prehistory. Project Features and AMMs which are found in Appendix B would avoid or minimize potential impacts on biological and cultural resources.

b) No Impact

This Project would be constructed in the vicinity of a few other past and planned Caltrans projects.

Table 3-1 Past and Planned Projects

Project Number and Title	Project Location	Project Type	Construction Year
04-4G640 Storm Damage Repair	SR-84 PM 21.6	Construct a secant wall	2018-2020
04-0J720 Various Erosion Control Measures	SR-84 PMs 9.3-10	Stormwater mitigation	2020
04-2K660 Injection Grouting	SR-84 PM 2.1	Injection grouting at slip out	2020
04-2K610 Peek-A-Boo RSP	SR-84 PM 5.2	Construct a soldier pile wall	2023
04-0K780 SM-84 CAPM	SR-84 PMs 21.5-25.7	Pavement rehabilitation	2024
04-2J790 Structure and Scour Mitigation	SR-84 PM 7.5	Addressing bridge scour	2024

The Project would not have any impacts that, when considered with these other nearby projects, would be considered cumulative. In addition, there are no other development projects planned in the vicinity of this Project that could potentially act in concert with Caltrans projects to result in cumulative impacts on the environment. There would be no impact.

c) No Impact

This Project does not have environmental effects that would cause substantial adverse effects on human beings either directly or indirectly.

3.3 Climate Change

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other elements of the Earth's climate system. The Intergovernmental Panel on Climate Change, established by the United Nations and World Meteorological Organization in 1988, is devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy. Climate change in the past has generally occurred gradually over millennia, or more suddenly in response to cataclysmic natural disruptions. The research of the Intergovernmental Panel on Climate Change and other scientists over recent decades, however, has unequivocally attributed an accelerated rate of climatological changes over the past 150 years to GHG emissions generated from the production and use of fossil fuels.

Human activities generate GHGs consisting primarily of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), tetrafluoromethane, hexafluoroethane, sulfur hexafluoride (SF₆), and various hydrofluorocarbons (HFCs). CO₂ is the most abundant GHG; while it is a naturally occurring and necessary component of Earth's atmosphere, fossil-fuel combustion is the main source of additional, human-generated CO₂ that is the main driver of climate change. In the U.S. and in California, transportation is the largest source of GHG emissions, mostly CO₂.

The impacts of climate change are already being observed in the form of sea level rise, drought, extended and severe fire seasons, and historic flooding from changing storm patterns. The most important strategy to address climate change is to reduce GHG emissions. Additional strategies are necessary to mitigate and adapt to these impacts. In the context of climate change, "mitigation" involves actions to reduce GHG emissions to lessen adverse impacts that are likely to occur. "Adaptation" is planning for and responding to impacts to reduce vulnerability to harm, such as by adjusting transportation design standards to withstand more intense storms, heat, and higher sea levels. This analysis will include a discussion of both in the context of this transportation project.

3.3.1 Regulatory Setting

This section outlines federal and state efforts to comprehensively reduce GHG emissions from transportation sources.

Federal

To date, no national standards have been established for nationwide mobile-source GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level.

The National Environmental Policy Act (NEPA) (42 United States Code [USC] Part 4332) requires federal agencies to assess the environmental effects of their proposed actions prior to making a decision on the action or project.

The Federal Highway Administration (FHWA) recognizes the threats that extreme weather, sea level change, and other changes in environmental conditions pose to valuable transportation infrastructure and those who depend on it. FHWA therefore supports a sustainability approach that assesses vulnerability to climate risks and incorporates resilience into planning, asset management, project development and design, and operations and maintenance practices (FHWA 2019). This approach encourages planning for sustainable highways by addressing climate risks while balancing environmental, economic, and social values— "the triple bottom line of sustainability" (FHWA n.d.). Program and project elements that foster sustainability and

resilience also support economic vitality and global efficiency, increase safety and mobility, enhance the environment, promote energy conservation, and improve the quality of life.

The federal government has taken steps to improve fuel economy and energy efficiency to address climate change and its associated effects. The most important of these was the Energy Policy and Conservation Act of 1975 (42 USC Section 6201) as amended by the Energy Independence and Security Act (EISA) of 2007; and Corporate Average Fuel Economy (CAFE) Standards. This act established fuel economy standards for on-road motor vehicles sold in the United States. The U.S. Department of Transportation's National Highway Traffic and Safety Administration (NHTSA) sets and enforces the CAFE standards based on each manufacturer's average fuel economy for the portion of its vehicles produced for sale in the United States. The Environmental Protection Agency (U.S. EPA) calculates average fuel economy levels for manufacturers, and also sets related GHG emissions standards under the Clean Air Act. Raising CAFE standards leads automakers to create a more fuel-efficient fleet, which improves our nation's energy security, saves consumers money at the pump, and reduces GHG emissions (U.S. DOT 2014).

U.S. EPA published a final rulemaking on December 30, 2021, that raised federal GHG emissions standards for passenger cars and light trucks for model years 2023 through 2026, increasing in stringency each year. This rulemaking revised lower emissions standards that had been previously established for model years 2021 through 2026 in the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part Two in June 2020. The updated standards will result in avoiding more than 3 billion tons of GHG emissions through 2050 (U.S. EPA 2021a).

State

California has been innovative and proactive in addressing GHG emissions and climate change by passing multiple Senate and Assembly bills and executive orders (EOs) including, but not limited to the following:

EO S-3-05 (June 1, 2005):

The goal of this EO is to reduce California's GHG emissions to: (1) year 2000 levels by 2010, (2) year 1990 levels by 2020, and (3) 80 percent below year 1990 levels by 2050. This goal was further reinforced with the passage of Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 32 in 2016.

AB 32, Chapter 488, 2006, Núñez and Pavley, The Global Warming Solutions Act of 2006:

AB 32 codified the 2020 GHG emissions reduction goals outlined in EO S-3-05, while further mandating that CARB create a scoping plan and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." The Legislature also intended that the statewide GHG emissions limit continue in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020 (Health and Safety Code Section 38551(b)). The law requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective GHG reductions.

EO S-01-07 (January 18, 2007):

This order sets forth the low carbon fuel standard for California. Under this EO, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by the year 2020. CARB re-adopted the low carbon fuel standard regulation in September 2015, and the changes went into effect on January 1, 2016. The program establishes a strong framework to

promote the low-carbon fuel adoption necessary to achieve the Governor's 2030 and 2050 GHG reduction goals.

SB 375, Chapter 728, 2008, Sustainable Communities and Climate Protection:

This bill requires CARB to set regional emissions reduction targets for passenger vehicles. The metropolitan planning organization for each region must then develop a “sustainable communities’ strategy” that integrates transportation, land-use, and housing policies to plan how each organization would achieve the emissions target for its region.

SB 391, Chapter 585, 2009, California Transportation Plan:

This bill requires the State’s long-range transportation plan to identify strategies to address California’s climate change goals under AB 32.

EO B-16-12 (March 2012):

This order requires State entities under the direction of the Governor, including CARB, the California Energy Commission, and the Public Utilities Commission, to support the rapid commercialization of zero-emission vehicles. It directs these entities to achieve various benchmarks related to zero-emission vehicles.

EO B-30-15 (April 2015):

This order establishes an interim statewide GHG emission reduction target of 40 percent below 1990 levels by 2030 to ensure California meets its target of reducing GHG emissions to 80 percent below 1990 levels by 2050. It further orders all State agencies with jurisdiction over sources of GHG emissions to implement measures, pursuant to statutory authority, to achieve reductions of GHG emissions to meet the 2030 and 2050 GHG emissions reductions targets. It also directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of million metric tons of carbon dioxide equivalent (MMTCO₂e). Finally, it requires the Natural Resources Agency to update the State’s climate adaptation strategy, Safeguarding California, every 3 years and to ensure that its provisions are fully implemented.

SB 32, Chapter 249, 2016:

This bill codifies the GHG reduction targets established in EO B-30-15 to achieve a mid-range goal of 40 percent below 1990 levels by 2030.

SB 1386, Chapter 545, 2016:

This bill declared “it to be the policy of the state that the protection and management of natural and working lands... is an important strategy in meeting the state’s greenhouse gas reduction goals, and would require all state agencies, departments, boards, and commissions to consider this policy when revising, adopting, or establishing policies, regulations, expenditures, or grant criteria relating to the protection and management of natural and working lands.”

AB 134, Chapter 254, 2017:

This bill allocates Greenhouse Gas Reduction Funds and other sources to various clean vehicle programs, demonstration/pilot projects, clean vehicle rebates and projects, and other emissions-reduction programs statewide.

SB 743, Chapter 386 (September 2013):

This bill changes the metric of consideration for transportation impacts pursuant to CEQA from a focus on automobile delay to alternative methods focused on VMT, to promote the state's goals of reducing GHG emissions and traffic-related air pollution and promoting multimodal transportation while balancing the needs of congestion management and safety.

SB 150, Chapter 150, 2017, Regional Transportation Plans:

This bill requires CARB to prepare a report that assesses progress made by each metropolitan planning organization in meeting their established regional GHG emission reduction targets.

EO B-55-18 (September 2018):

This order sets a new statewide goal to achieve and maintain carbon neutrality no later than 2045. This goal is in addition to existing statewide targets for reducing GHG emissions.

EO N-19-19 (September 2019):

This order advances California's climate goals in part by directing the California State Transportation Agency to leverage annual transportation spending to reverse the trend of increased fuel consumption and reduce GHG emissions from the transportation sector. It orders a focus on transportation investments near housing, on managing congestion, and on encouraging alternatives to driving. This EO also directs CARB to encourage automakers to produce more clean vehicles, to formulate ways to help Californians purchase them, and to propose strategies to increase demand for zero-emission vehicles.

3.3.2 Environmental Setting

The Project is in a rural area, with an economy that is primarily based on natural resources, agriculture, and tourism. State Route 84 is the main transportation route to and through the area between U.S. 101 and SR 1 for both passenger and commercial vehicles. The nearest alternate route is SR 92, 13.4 miles to the north. Traffic counts are low, and SR 84 is rarely congested.

Plan Bay Area 2040, the regional planning document of the Metropolitan Transportation Commission (MTC) and Association of Bay Area Governments (ABAG) (MTC and ABAG 2017), guides transportation development in San Mateo County. To inform *Plan Bay Area 2050*, MTC and ABAG collaborated in 2018 on Horizon, a new initiative to explore issues and challenges the region may face by 2050. The BAAQMD's 2017 clean air plan, *Spare the Air, Cool the Climate*, addresses GHGs in the project region.

A GHG emissions inventory estimates the amount of GHGs discharged into the atmosphere by specific sources over a period of time, such as a calendar year. Tracking annual GHG emissions allows countries, states, and smaller jurisdictions to understand how emissions are changing and what actions may be needed to attain emission reduction goals. U.S. EPA is responsible for documenting GHG emissions nationwide, and CARB does so for the State, as required by California Health and Safety Code Section 39607.4.

National GHG Inventory

U.S. EPA has prepared *the Inventory of the US Greenhouse Gas Emissions and Sinks* every year since the 1990s and submits it to the United Nations in accordance with the Framework Convention on Climate Change. The inventory provides a comprehensive accounting of all human-produced sources of GHGs in the United States, reporting emissions of CO₂, CH₄, N₂O, HFCs, perfluorocarbons, SF₆, and nitrogen trifluoride. It also accounts for emissions of CO₂ that are removed from the atmosphere by "sinks," such as forests, vegetation, and soils that uptake

and store CO₂ (carbon sequestration). In 2018, GHG emissions from the transportation sector accounted for 28 percent of GHG emissions (Figure -1) in the United States (U.S. EPA 2020).

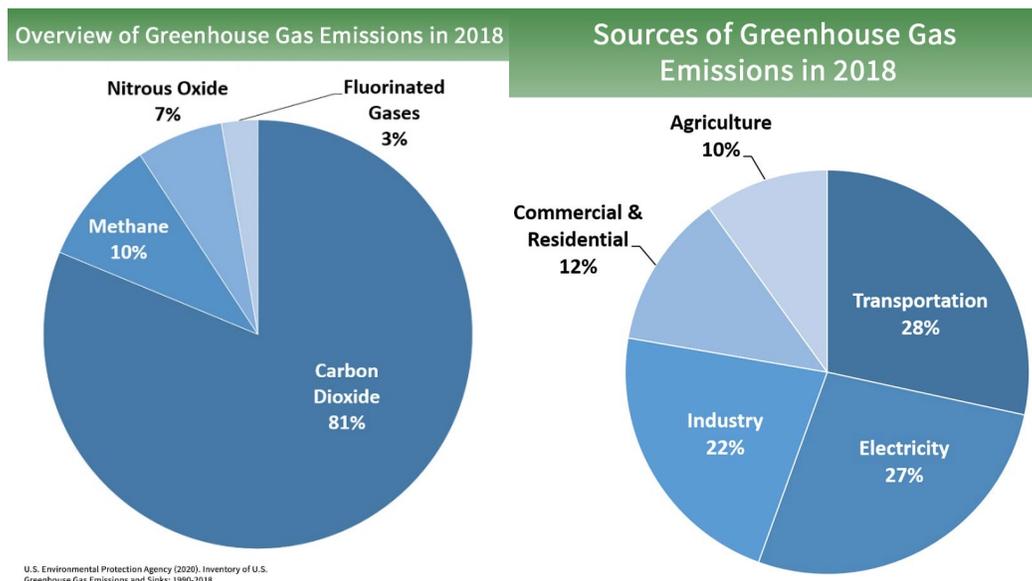


Figure 3-2 U.S. 2018 Greenhouse Gas Emissions

State GHG Inventory

CARB collects GHG emissions data for the transportation, electricity, commercial/residential, industrial, agricultural, and waste management sectors each year. It then summarizes and highlights major annual changes and trends to demonstrate the state’s progress in meeting its GHG reduction goals. The 2019 edition of the GHG emissions inventory (CARB 2021a) found total California emissions of 424.1 MMTCO₂e for 2017, with the transportation sector responsible for 41 percent of the total GHGs (Figure 3-2). It also found that overall statewide GHG emissions declined from 2000 to 2017 (Figure 3-3) despite the growth in population and the state’s economic output (CARB 2021b).

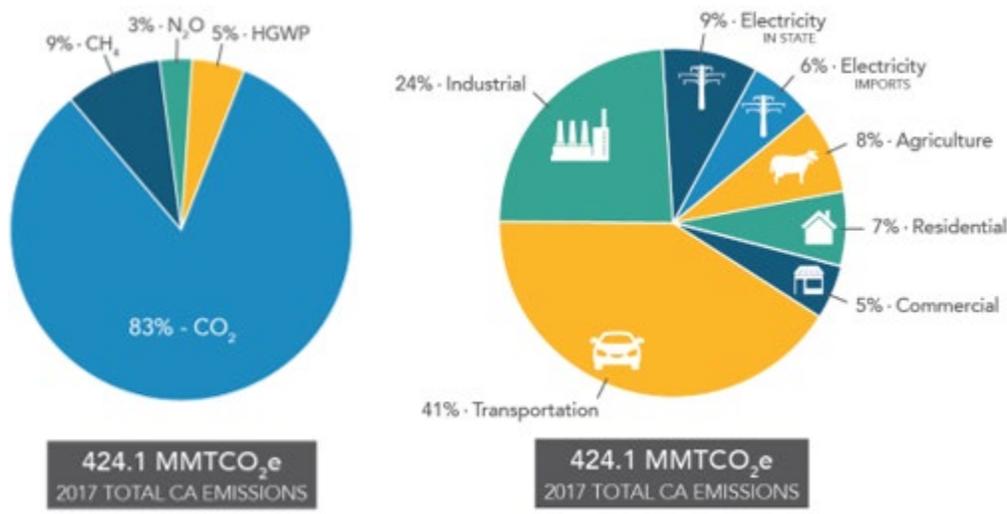


Figure 3-3 California 2017 Greenhouse Gas Emissions

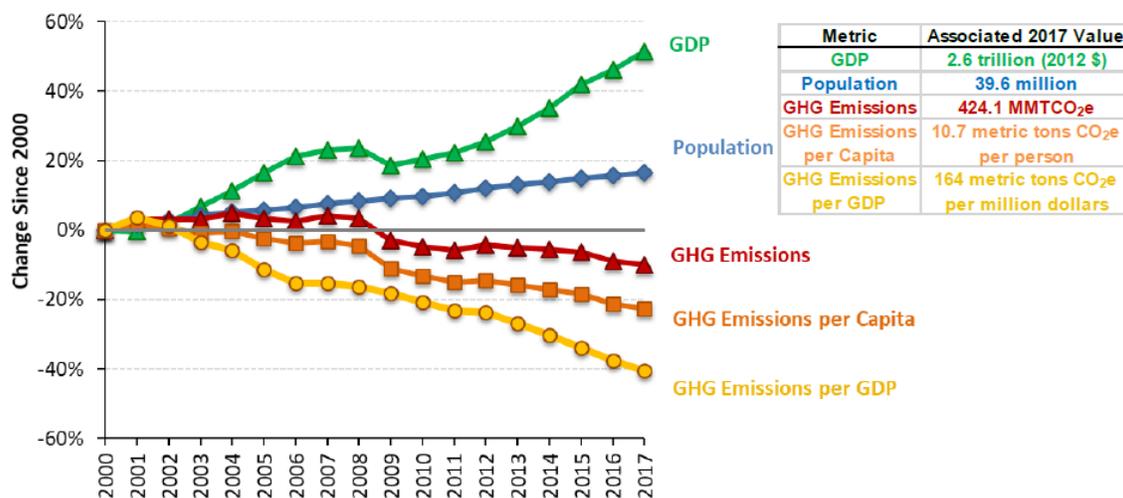


Figure 3-4 Change in California GDP, Population, and GHG Emissions since 2000

(Source: CARB 2021c)

AB 32 required CARB to develop a scoping plan that describes the approach California would take to achieve the goal of reducing GHG emissions to 1990 levels by 2020, and to update the goal every 5 years. CARB adopted the first scoping plan in 2008. The second updated plan, California’s 2017 Climate Change Scoping Plan, adopted on December 14, 2017, reflects the 2030 target established in EO B-30-15 and SB 32. The AB 32 Scoping Plan and the subsequent updates contain the main strategies California would use to reduce GHG emissions.

Regional Plans

CARB sets regional targets for California’s 18 metropolitan planning organizations to use in their Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to plan future projects that would cumulatively achieve GHG reduction goals. Targets are set at a percent reduction of passenger vehicle GHG emissions per person from 2005 levels. MTC is the MPO and regional transportation planning agency for the project region, with GHG reduction targets of 10 percent by 2020 and 19 percent by 2035. However, the proposed project is not included in the *Plan Bay Area 2040* (MTC and ABAG 2017) because it is not a roadway project and would not result in an increase in vehicle traffic or volumes.

The 2017 clean air plan, *Spare the Air, Cool the Climate* (BAAQMD 2017), defines strategies for climate protection in the Bay Area that support goals laid out in *Plan Bay Area 2040* (MTC and ABAG 2017). Those goals include transforming the transportation sector to reduce motor vehicle travel, promote zero-emissions vehicles and renewable fuels, adopt fixed- and flexible-route transit services, and support infrastructure and planning that enable a large share of trips by bicycling, walking, and transit.

3.3.3 Project Analysis

GHG emissions from transportation projects can be divided into those produced during operation of the State Highway System and those produced during construction. The primary

GHGs produced by the transportation sector are CO₂, CH₄, N₂O, and HFCs. CO₂ emissions are a product of the combustion of petroleum-based products, like gasoline, in internal combustion engines. Relatively small amounts of CH₄ and N₂O are emitted during fuel combustion.

The CEQA Guidelines generally address GHG emissions as a cumulative impact due to the global nature of climate change (Pub. Resources Code, section 21083(b)(2)). As the California Supreme Court explained, “because of the global scale of climate change, any one project's contribution is unlikely to be significant by itself” (Cleveland National Forest Foundation v. San Diego Assn. of Governments (2017) 3 Cal.5th 497, 512). In assessing cumulative impacts, it must be determined if a project's incremental effect is “cumulatively considerable” (CEQA Guidelines Sections 15064(h)(1) and 15130).

To make this determination, the incremental impacts of the project must be compared with the effects of past, current, and probable future projects. Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment.

Operational Emissions

The purpose of the Project is to permanently repair an eroded slope from storm damage. The proposed project is not a capacity increasing project. Because the project would not increase the number of travel lanes, no increase in VMT would occur as result of project implementation. Although some GHG emissions during the construction period would be unavoidable, no increase in operational GHG emissions is expected.

Construction Emissions

Construction GHG emissions would result from material processing, on-site construction equipment, workers commuting to and from the project site, and traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases.

In addition, with innovations such as improved traffic management plans and changes in materials, the GHG emissions produced during construction can be offset to some degree by longer intervals between maintenance and rehabilitation activities.

As discussed in Section 3.3.8. Greenhouse Gas Emissions, GHG gasses would be generated during construction of the project. It was estimated that for a construction duration of 9 months, the total amount of CO₂ produced for the construction of the project would be 197 tons. Total CO₂e emissions (CO₂, CH₄, and N₂O) would be 211 metric tons.

Implementation of Caltrans Standard Specifications, such as complying with air-pollution-control rules, regulations, ordinances, and statutes that apply to work performed under the contract and the use of construction BMPs (such as performing regular vehicle and equipment maintenance and limiting the idling of vehicles and equipment on-site), would result in a reduction of GHG emissions from construction activities.

CEQA Conclusion

While the proposed project would result in GHG emissions during construction, it is not expected to result in any increase in operational GHG emissions. The proposed project does not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing

the emissions of GHGs. With implementation of construction GHG-reduction measures, the impact would be less than significant.

Caltrans is firmly committed to implementing measures to help reduce GHG emissions. These measures are outlined in the following section.

3.3.4 Greenhouse Gas Reduction Strategies

Statewide Efforts

Major sectors of the California economy, including transportation, would need to reduce emissions to meet the 2030 and 2050 GHG emissions targets. Former Governor Edmund G. Brown promoted GHG reduction goals that involved (1) reducing today’s petroleum use in cars and trucks by up to 50 percent; (2) increasing the electricity derived from renewable sources from one-third to one-half (30 percent to 50 percent); (3) doubling the energy efficiency savings achieved at existing buildings and making heating fuels cleaner; (4) reducing the release of CH₄, BC, and other short-lived climate pollutants; (5) managing farms and rangelands, forests, and wetlands so that they can store carbon; and (6) periodically updating the State’s climate adaptation strategy, *Safeguarding California*. Figure 3.4 shows California’s climate strategy.

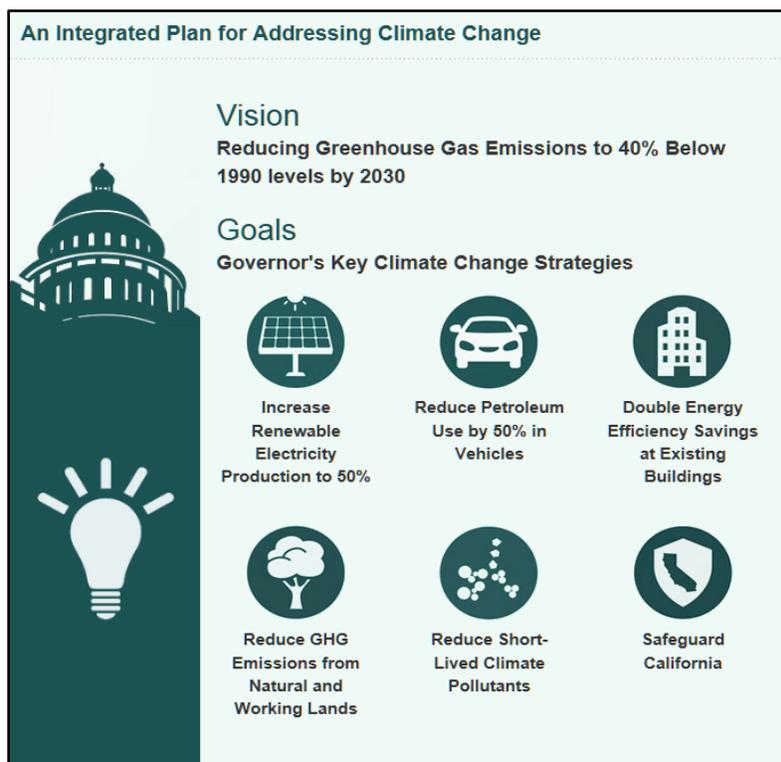


Figure 3-5 California Climate Strategy

The transportation sector is integral to the people and economy of California. To achieve GHG emission reduction goals, it is vital that the State build on past successes in reducing criteria and toxic air pollutants from transportation and goods movement. GHG emission reductions would come from cleaner vehicle technologies, lower-carbon fuels, and reduction of VMT. A key State goal for reducing GHG emissions is to reduce today's petroleum use in cars and trucks by up to 50 percent by 2030 (State of California 2019).

In addition, SB 1386 (Wolk 2016) established as state policy the protection and management of natural and working lands and requires state agencies to consider that policy in their own decision making. Trees and vegetation on forests, rangelands, farms, and wetlands remove CO₂ from the atmosphere through biological processes and sequester the carbon in above- and below-ground matter.

Caltrans Activities

Caltrans continues to be involved on the Governor's Climate Action Team as CARB works to implement EOs S-3-05 and S-01-07. Caltrans also continues to help achieve the targets set forth in AB 32. EO B-30-15, issued in April 2015, and SB 32 (2016) set an interim target to cut GHG emissions to 40 percent below 1990 levels by 2030. The following major initiatives are underway at Caltrans to help meet these targets.

California Transportation Plan

The California Transportation Plan (CTP) is a statewide, long-range transportation plan to meet our future mobility needs and reduce GHG emissions. In 2016, Caltrans completed the *California Transportation Plan 2040* (CTP 2040) (Caltrans 2016), which establishes a new model for developing ground transportation systems that is consistent with CO₂ reduction goals. It serves as an umbrella document for all the other statewide transportation planning documents. Over the next 25 years, California would be working to improve transit and reduce long-run repair and maintenance costs of roadways, and to develop a comprehensive assessment of climate-related transportation demand management and new technologies rather than continuing to expand capacity on existing roadways.

SB 391 (Liu 2009) requires the CTP to meet California's climate change goals under AB 32. Accordingly, the CTP 2040 identifies the statewide transportation system needed to achieve maximum feasible GHG emission reductions while meeting the state's transportation needs. While metropolitan planning organizations have primary responsibility for identifying land use patterns to help reduce GHG emissions, the CTP 2040 identifies additional strategies in pricing, transportation alternatives, mode shift, and operational efficiency.

Caltrans Strategic Management Plan

Caltrans Strategic Management Plan 2015 – 2020 (Caltrans 2015) creates a performance-based framework to preserve the environment and reduce GHG emissions, among other goals. Specific performance targets in the plan that would help to reduce GHG emissions include:

- Increasing percentage of non-auto mode share
- Reducing VMT
- Reducing Caltrans' internal operational (buildings, facilities, and fuel) GHG emissions

Funding and Technical Assistance Programs

In addition to developing plans and performance targets to reduce GHG emissions, Caltrans also administers several sustainable transportation planning grants. These grants encourage local and regional multimodal transportation, housing, and land use planning that furthers the region's RTP/SCS; contribute to the state's GHG reduction targets and advance transportation-related GHG emission reduction project types/strategies; and support other climate adaptation goals (e.g., Safeguarding California).

Caltrans Policy Directives and Other Initiatives

Caltrans' Director's Policy 30 (DP-30) Climate Change (June 22, 2012) is intended to establish a Department policy that would ensure coordinated efforts to incorporate climate change into Caltrans decisions and activities.

Caltrans Activities to Address Climate Change (April 2013) provides a comprehensive overview of Caltrans' statewide activities to reduce GHG emissions resulting from agency operations.

Project-Level GHG Reduction Strategies

The proposed project would also implement the following measures to reduce GHG emissions and potential climate change impacts from the project:

1. Caltrans Standard Specifications such as Section 14-9.02, Air Pollution Control, require contractors to comply with all federal, state, and local air pollution control rules, regulations, and ordinances. Requirements such as idling restrictions and keeping engines properly tuned reduce emissions, including GHG emissions.
2. A TMP would be prepared during the design phase of the project to minimize traffic disruptions from project construction. Minimizing traffic delays during construction would help reduce GHG emissions from idling vehicles.

Adaptation

Reducing GHG emissions is only one part of an approach to addressing climate change. Caltrans must plan for the effects of climate change on the state's transportation infrastructure and strengthen or protect the facilities from damage. Climate change is expected to produce increased variability in precipitation, rising temperatures, rising sea levels, variability in storm surges and their intensity, and variability in the frequency and intensity of wildfires. Flooding and erosion can damage or wash out roads; longer periods of intense heat can buckle pavement and railroad tracks; and storm surges combined with a rising sea level can inundate highways. Wildfire can directly burn facilities and indirectly cause damage when rain falls on denuded slopes that suffer landslides after a fire. Effects would vary by location and may, in the most extreme cases, require that a facility be relocated or redesigned. Accordingly, Caltrans must consider these types of climate stressors in how highways are planned, designed, built, operated, and maintained.

Federal Efforts

Under NEPA assignment, Caltrans is obligated to comply with all applicable federal environmental laws and FHWA NEPA regulations, policies, and guidance.

The U.S. Global Change Research Program (USGCRP) delivers a report to Congress and the president every 4 years, in accordance with the Global Change Research Act of 1990 (15 USC Chapter 56A Section 2921 et seq.). The Fourth National Climate Assessment (USGCRP 2018), presents the foundational science and the "human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways." Chapter 12, "Transportation," presents a key discussion of vulnerability assessments. It notes that "asset owners and operators have increasingly conducted more focused studies of particular assets that consider multiple climate hazards and scenarios in the context of asset-specific information, such as design lifetime" (USGCRP 2018).

The USDOT Policy Statement on Climate Adaptation in June 2011 committed the federal Department of Transportation to “integrate consideration of climate change impacts and adaptation into the planning, operations, policies, and programs of DOT in order to ensure that taxpayer resources are invested wisely, and that transportation infrastructure, services and operations remain effective in current and future climate conditions” (U.S. DOT 2011).

FHWA order 5520 (Transportation System Preparedness and Resilience to Climate Change and Extreme Weather Events, December 15, 2014) established FHWA policy to strive to identify the risks of climate change and extreme weather events to current and planned transportation systems. FHWA has developed guidance and tools for transportation planning that foster resilience to climate effects and sustainability at the federal, state, and local levels (FHWA 2019).

State Efforts

Climate change adaptation for transportation infrastructure involves long-term planning and risk management to address vulnerabilities in the transportation system. California’s Fourth Climate Change Assessment (State of California 2018a) is the state’s effort to “translate the state of climate science into useful information for action” in a variety of sectors at both statewide and local scales. It adopts the following key terms used widely in climate change analysis and policy documents:

- *Adaptation* to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
- *Adaptive capacity* is the “combination of the strengths, attributes, and resources available to an individual, community, society, or organization that can be used to prepare for and undertake actions to reduce adverse impacts, moderate harm, or exploit beneficial opportunities.”
- *Exposure* is the presence of people, infrastructure, natural systems, and economic, cultural, and social resources in areas that are subject to harm.
- *Resilience* is the “capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience”. Adaptation actions contribute to increasing resilience, which is a desired outcome or state of being.
- *Sensitivity* is the level to which a species, natural system, or community, government, etc., would be affected by changing climate conditions.
- *Vulnerability* is the “susceptibility to harm from exposure to stresses associated with environmental and social change and from the absence of capacity to adapt.” Vulnerability can increase because of physical (built and environmental), social, political, and/or economic factor(s). These factors include, but are not limited to, ethnicity, class, sexual orientation and identification, national origin, and income inequality.² Vulnerability is often defined as the combination of sensitivity and adaptive capacity as affected by the level of exposure to changing climate.

Several key state policies have guided climate change adaptation efforts to date. Recent state publications produced in response to these policies draw on these definitions.

EO S-13-08, issued by then-governor Arnold Schwarzenegger in November 2008, focused on sea level rise and resulted in the *California Climate Adaptation Strategy* (2009), updated in 2014 as *Safeguarding California: Reducing Climate Risk* (Safeguarding California Plan). The Safeguarding California Plan offers policy principles and recommendations and continues to be revised and augmented with sector-specific adaptation strategies, ongoing actions, and next steps for agencies.

EO S-13-08 also led to the publication of a series of sea level rise assessment reports and associated guidance and policies. These reports formed the foundation of an interim *State of California Sea level Rise Interim Guidance Document* in 2010, with instructions for how state agencies could incorporate “sea level rise (SLR) projections into planning and decision making for projects in California” in a consistent way across agencies. The guidance was revised and augmented in 2013. *Rising Seas in California – An Update on Sea level Rise Science* was published in 2017 and its updated projections of sea level rise and new understanding of processes and potential impacts in California were incorporated into the *State of California Sea level Rise Guidance: 2018 Update* (State of California 2018b).

EO B-30-15, signed in April 2015, requires state agencies to factor climate change into all planning and investment decisions. This EO recognizes that effects of climate change other than sea level rise also threaten California’s infrastructure. At the direction of EO B-30-15, the Office of Planning and Research published *Planning and Investing for a Resilient California: A Guidebook for State Agencies* in 2017, to encourage a uniform and systematic approach. Representatives of Caltrans participated in the multi-agency, multidisciplinary technical advisory group that developed this guidance on how to integrate climate change into planning and investment.

AB 2800 (Quirk 2016) created the multidisciplinary Climate-Safe Infrastructure Working Group, which in 2018 released its report, *Paying it Forward: The Path Toward Climate-Safe Infrastructure in California*. The report provides guidance to agencies on how to address the challenges of assessing risk in the face of inherent uncertainties still posed by the best available science on climate change. It also examines how state agencies can use infrastructure planning, design, and implementation processes to address the observed and anticipated climate change impacts.

Caltrans Adaptation Efforts

Caltrans Vulnerability Assessments

Caltrans is conducting climate change vulnerability assessments to identify segments of the State Highway System vulnerable to climate change effects including precipitation, temperature, wildfire, storm surge, and sea level rise. The approach to the vulnerability assessments was tailored to the practices of a transportation agency, and involves the following concepts and actions:

- *Exposure* – Identify Caltrans assets exposed to damage or reduced service life from expected future conditions.
- *Consequence* – Determine what might occur to system assets in terms of loss of use or costs of repair.
- *Prioritization* – Develop a method for making capital programming decisions to address identified risks, including considerations of system use and/or timing of expected exposure.

The climate change data in the assessments were developed in coordination with climate change scientists and experts at federal, state, and regional organizations at the forefront of climate science. The findings of the vulnerability assessments would guide analysis of at-risk assets and development of adaptation plans to reduce the likelihood of damage to the State Highway System, allowing Caltrans to both reduce the costs of storm damage and to provide and maintain transportation that meets the needs of all Californians.

Project Adaptation Analysis

The January 2018 Caltrans Climate Change Vulnerability Assessment for the District 4 region (Caltrans 2018), which covers the nine-county San Francisco Bay Area, was consulted regarding climate stressors in the project area. The report and accompanying Climate Change Vulnerability Assessment map tool (Caltrans 2017) identified the following climate change conditions for the project area for the analysis years 2025, 2055, and 2085.

Sea Level Rise

The Project is outside the Coastal Zone and not in an area subject to sea level rise. Accordingly, direct impacts to transportation facilities due to projected sea level rise are not expected.

Floodplains

Mapping in the Climate Change Vulnerability Assessment for the District 4 region (Caltrans 2018) shows that the 100-year storm precipitation depth in the project area could change by up to 9.9 percent by 2055 and beyond. The proposed work takes place within a regulatory floodway. A complete discussion on floodplains is provided in Section 3.3.10.

Wildfire

The Project location is within a State Responsibility Area and moderate fire hazard severity zone (CalFire 2008). During construction, measures for minimizing fire risks would be incorporated, such as clearing vegetation and trees from the work area or prohibiting the use of highly flammable chemicals. All project construction would follow state and federal fire regulations. The project is not anticipated to exacerbate the effects of climate change in terms of wildfire. A complete discussion on potential wildfire impacts at both project locations is provided in Section 3.3.20.

Chapter 4 Comments and Coordination

Project Development Team and Focus Meetings

11 March 2022, 24 February 2022, 1 October 2021, 14 September 2021, 12 August 2021, 10 August 2021, 6 August 2021: The project team discussed and coordinated on issues such as fish passage and bioengineering methods for the San Gregorio Creek.

United States Fish and Wildlife Service

6 April 2021: An official USFWS species list was obtained from IPaC

4 May 2021: Caltrans Office of Biological Sciences and Permits (OBSP) contacted USFWS Liaison to request technical assistance

28 July 2021: A virtual field visit (due to COVID-19 safety protocol) was conducted between Caltrans 0Q480 PDT and external agency partners

California Department of Fish and Wildlife

17 May 2021: A species list was obtained from California Natural Diversity Database (CNDDB)

17 May 2021: Caltrans OBSP contacted Robert Stanley of CDFW to request technical assistance

28 July 2021: A virtual field visit (due to COVID-19 safety protocol) was conducted between Caltrans 0Q480 PDT and external agency partners

NOAA Fisheries

4 May 2021: Caltrans OBSP contacted Elena Meza of NOAA Fisheries to request technical assistance

28 July 2021: A virtual field visit (due to COVID-19 safety protocol) was conducted between Caltrans 0Q480 PDT and external agency partners

Chapter 5 List of Preparers

The primary persons responsible for contributing to, preparing, and reviewing the report are listed in Table 5-1.

Table 5-1 List of Preparers and Reviewers

Organization	Name	Role
Caltrans	Lindsay Vivian	Office Chief, Office of Environmental Analysis
Caltrans	Zachary Gifford	Branch Chief, Office of Environmental Analysis
Caltrans	Tanvi Gupta	Environmental Scientist, Office of Environmental Analysis
Caltrans	Rommel Pardo	Project Manager, Division of Program/Project Management
Caltrans	Yanzhi Zhai	Senior Project Engineer, Office of Design
Caltrans	Quoc Ngo	Project Engineer, Office of Design
Caltrans	Gregory Pera	Branch Chief, Office of Biological Sciences and Permits
Caltrans	Grant Samaniego	Biologist, Office of Biological Sciences and Permits
Caltrans	Helen Blackmore	Branch Chief, Office of Cultural Resource Studies
Caltrans	Kathryn Rose	Branch Chief, Office of Cultural Resource Studies
Caltrans	Charles Palmer	Associate Environmental Planner, Office of Cultural Resource Studies
Caltrans	Althea Asaro	Associate Environmental Planner, Office of Cultural Resource Studies
Caltrans	Mojgan Mosooli	Office Chief, Office of Water Quality
Caltrans	Saman Soheilifard	Transportation Engineer, Office of Water Quality

Caltrans	Kimberly White	Branch Chief, Office of Landscape Architecture
Caltrans	Angela Kwan	Landscape Associate, Office of Landscape Architecture
Caltrans	Khai Leong	Office Chief, Office of Hydraulic Engineering
Caltrans	Christopher Risen	Senior Engineering Geologist, Office of Geotechnical Design West
Caltrans	Christopher Wilson	District Branch Chief, Office of Hazardous Waste

Chapter 6 Distribution List

The Draft Initial Study with Proposed Mitigated Negative Declaration would be circulated by July 7th, 2022, to the following agencies and government officials:

Agencies

U.S. Fish and Wildlife Service

U.S. Army Corps of Engineers

National Marine Fisheries Service

San Francisco Bay Regional Water Quality Control Board

California Department of Fish and Wildlife

California Department of Parks and Recreation

Governor's Office of Planning and Research

San Mateo County Clerk

Federal Elected Officials

The Honorable Dianne Feinstein
United States Senate
One Post Street
Suite 2450
San Francisco, CA 94104

The Honorable Alex Padilla
United States Senate
333 Bush Street, Suite 3225
San Francisco, CA 94104

The Honorable Jackie Speier
United States House of Representatives
(CA-14)
155 Bovet Road, Suite 780
San Mateo, CA 94402

State Elected Officials

The Honorable Josh Becker,
California State Senate District 13
1528 South El Camino Real, Suite 303
San Mateo, CA 94402

The Honorable Marc Berman
California State Assembly District 24
5050 El Camino Real, Suite 117
Los Altos, CA 94022

Local Elected Officials

The Honorable Don Horsley,
San Mateo County Board of Supervisors,
District 3
400 County Center
Redwood City, CA 94063

Appendix A. Title VI Policy Statement

STATE OF CALIFORNIA—CALIFORNIA STATE TRANSPORTATION AGENCY

Gavin Newsom, Governor

DEPARTMENT OF TRANSPORTATION

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Making Conservation
a California Way of Life.

September 2021

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Caltrans will make every effort to ensure nondiscrimination in all of its services, programs and activities, whether they are federally funded or not, and that services and benefits are fairly distributed to all people, regardless of race, color, or national origin. In addition, Caltrans will facilitate meaningful participation in the transportation planning process in a nondiscriminatory manner.

Related federal statutes, remedies, and state law further those protections to include sex, disability, religion, sexual orientation, and age.

For information or guidance on how to file a complaint, or obtain more information regarding Title VI, please contact the Title VI Branch Manager at (916) 324-8379 or visit the following web page:
<https://dot.ca.gov/programs/civil-rights/title-vi>.

To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Civil Rights, at 1823 14th Street, MS-79, Sacramento, CA 95811; PO Box 942874, MS-79, Sacramento, CA 94274-0001; (916) 324-8379 (TTY 711); or at Title.VI@dot.ca.gov.

A blue ink signature of Toks Omishakin, consisting of a stylized 'T' and 'O' followed by a cursive flourish.

Toks Omishakin
Director

"Provide a safe and reliable transportation network that serves all people and respects the environment."

Appendix B. List of Project Features; Avoidance Minimization Measures; and Mitigation Measures

Project Features

The Project contains several standardized Project components that are employed on most, if not all, of Caltrans projects and were not developed in response to any specific environmental impact resulting from the Project. These components are referenced as Project Features in Chapter 3 as they pertain to different environmental resources, and are separated out from AMMs and Mitigation Measures, which directly relate to the impacts resulting from the proposed Project.

Project Feature AQ-1: Control Measures for Construction Emissions of Fugitive Dust. Dust control measures would be implemented to minimize airborne dust and soil particles generated from graded areas. For disturbed soil areas, the use of an organic tackifier to control dust emissions would be included in the construction contract. Watering guidelines would be established by the contractor and approved by the Caltrans resident engineer. Any material stockpiles would be watered, sprayed with tackifier, or covered to minimize dust production and wind erosion.

Project Feature AQ-2: Air Pollution Control. Caltrans Standard Specifications Section 14-9.02, Air Pollution Control, requires contractors to follow all air pollution control rules, regulations, ordinances, and statutes.

Project Feature BIO-1 Worker Environmental Awareness Training: Construction personnel will attend a mandatory environmental education program delivered by an agency-approved biological monitor prior to taking part in construction, including vegetation clearing. The program will focus on the conservation measures that are relevant to an employee's personal responsibility and will include an explanation as how to best avoid take of the California Red-legged Frog, CCC DPS Steelhead, CCC ESU Coho Salmon, and the Marbled Murrelet. The training will teach construction staff how to identify and avoid species.

Project Feature BIO-2: Environmentally Sensitive Areas. The contractor would be required to place temporary high visibility barrier fencing along the boundaries of all environmentally sensitive areas (ESAs) to avoid impacts to sensitive habitat, plants, and animals. ESAs would be defined with high visibility fencing, lathing stakes and tape, or pin flags as appropriate. The materials used to identify the locations would be removed at the end of construction. ESAs would be delineated on construction plans.

Project Feature BIO-3: Bird Protection Measures. To avoid take of migratory birds during the bird nesting season (February 1 to September 30): To the extent practicable, vegetation removal would only occur between October 1 and January 31.

Project Feature BIO-4: Revegetation and Weed Control. To comply with Executive Order 13112, the contractor would minimize the spread of invasive and nonnative plant species. If noxious weeds are disturbed or removed during construction-related activities, the contractor would contain the noxious weeds and associated plant material and dispose of them in a manner that would not promote spread of the species. The contractor would be responsible for obtaining all permits, licenses, and environmental clearances for properly disposing of materials. Areas subject to noxious weed removal or disturbance would be replanted with fast-growing native

grasses or a native erosion control seed mixture. Where seeding is not practical, disturbed areas within the footprint would be covered with heavy black plastic solarization material until the end of the Project.

Project Feature BIO-5: Speed Limit. Vehicles would not exceed 15 miles per hour in the Project footprint to reduce dust and excessive soil disturbance.

Project Feature BIO-6: Trash Control. Food and food related trash items would be secured in sealed trash containers and removed from the site at the end of each day.

Project Feature CULT-1: Stop Work Upon Discovery of Cultural Materials. If cultural materials are discovered during construction, all earth-moving activity within a sixty-foot radius would be halted until a Caltrans Professionally Qualified Staff (PQS) can assess the nature and significance of the find.

Project Feature CULT-2: Additional Actions if Cultural Materials Contain Human Remains. If Caltrans PQS determines that cultural materials contain human remains, State Health and Safety Code Section 7050.5 states that further disturbances and activities shall stop in any area or nearby area suspected to overlie remains. Caltrans' OCRS would contact the San Mateo County Coroner. Pursuant to PRC Section 5097.98, if the remains are thought by the coroner to be Native American, the coroner would notify the Native American Heritage Commission, which would then notify the Most Likely Descendent. The Caltrans OCRS would work with the Most Likely Descendent on the respectful treatment and disposition of the remains. Further provisions of PRC 5097.98 are to be followed as applicable.

Project Feature GHG-1 Emissions Reduction: Caltrans Standard Specifications Section 7-1.02A and 7-1.02C, Emissions Reduction, require contractors to comply with all laws applicable to the Project and to certify they are aware of and would comply with all ARB emission reduction regulations.

Project Feature WQ-1 Construction Site BMPs: The project would be compliant with the Construction General Permit issued by the State Water Resources Control Board and with the Provisions of the Caltrans Statewide National Pollution Discharge Elimination System permit. The contractor would be required to prepare and submit a Construction Site Dewatering and Diversion Plan and Stormwater Pollution Prevention Plan for approval. The contractor would adhere to the instructions, protocols, and specifications, outlined in the most current Caltrans Construction Site Best Management Practices Manual and Caltrans Standard Specifications.

At a minimum, protective measures would include the following:

- Disallowing discharging of pollutants from vehicle and equipment cleaning into storm drains or watercourses
- Storing or servicing vehicles and construction equipment including fueling, cleaning and maintenance at least 50 feet from aquatic habitat unless separated by a topographic or drainage barrier.
- Maintaining equipment to prevent the leakage of vehicle fluids such as gasoline, oils, or solvents and developing a Spill Response Plan. Hazardous materials such as fuels, oils, solvents, etc. would be stored in sealable containers in a designated location that is at least 50 feet from aquatic habitats.

- Collecting and disposing of concrete wastes and water from curing operations in appropriate washouts located at least 50 feet from watercourses.
- Using water trucks and dust palliatives to control dust and covering temporary stockpiles.
- Installing coir rolls or straw wattles along or at the base of slopes during construction to capture sediment.
- Protecting graded areas from erosion using a combination of silt fences, fiber rolls, and erosion control netting (jute or coir) as appropriate.

Project Feature TRIBE-1 Protect Discovered Tribal Cultural Resources with Temporary Fencing:

If any tribal cultural resources are found during construction, a qualified Caltrans archaeologist shall determine whether the resources can be avoided by the Project. If the resources can be avoided, the resources would be delineated on the ground with temporary fencing and avoided by construction. No construction-related activities or staging are permitted within these areas.

Avoidance and Minimization Measures

AMM AES-1: Transparent Barrier: Caltrans would incorporate aesthetically pleasing high transparent barriers.

AMM AES-2: Erosion Control: Post construction, all disturbed areas would be restored to pre-construction conditions and treated with erosion control.

AMM AES-3: Drainpipe Treatment: Caltrans would incorporate stained or color-treated drainpipes in an earth tone or black color to minimize visual impacts.

AMM AES-4: Replanting Plan: All impacted vegetation would be evaluated for replacement. Depending on the extent of removal, a one-year plant establishment period may be required.

AMM AES-5 Buried Wall Face: The proposed retaining wall would be buried to the maximum extent practicable. The resultant slope and all other disturbed areas would be revegetated with native seed.

AMM BIO-1 Amphibian Species Monitoring: An USFWS approved biologist would be on site during all work that could reasonably result in take of an amphibian. The biologist, through coordination with the Resident Engineer, would have authority to stop work that may result in unauthorized take. USFWS would be notified by telephone and email within one working day if the agency approved biologist exercises this authority. If an amphibian is discovered on site, the biologist and Resident Engineer would be contacted immediately. If the amphibian gains access to the construction site, all work within 50 feet until the species leaves the site on its own volition or is removed and relocated by the biologist. The USFWS would be notified by telephone and email within one working day if an amphibian is discovered on site.

AMM BIO-2 Preconstruction Surveys: The USFWS approved biologist would conduct preconstruction surveys no more than twenty days prior to any initial ground disturbance and immediately prior to ground disturbing activities or vegetation removal. Surveys would consist of walking and visually inspecting the Project footprint and adjacent areas within at least 50 feet of

the footprint if possible. The USFWS approved biologist would investigate potential cover sites when feasible and safe to do so. Safety permitting, the agency approved biologist would investigate areas of disturbed soil within thirty minutes following initial disturbance for signs of the frog. Native species found within the footprint would be documented and relocated to an appropriate habitat outside the footprint.

AMM BIO-3 Weather Restriction: Work would not occur during or within 24 hours following a rain event exceeding 0.2 inch of precipitation.

AMM BIO-4 Entrapment Prevention: All excavated, steep-walled holes or trenches more than one foot deep would be covered at the close of each working day with plywood or similar materials. Before holes or trenches are filled, they would be thoroughly inspected for trapped animals. Plastic monofilament netting (i.e. erosion control matting) or similar material would not be used. Prior to their arrival on site, all open-ended pipes, culverts, drainage inlet boxes, catch basins, or similar structures would be sealed or capped, and remain capped or sealed until they are installed and operational.

AMM BIO-5 Decontamination: The agency approved biologist would take precautions to prevent introduction of amphibian diseases.

AMM BIO-7 Fish Work Window: Construction activities within the creek would be limited to the dry season between June 1 and October 31 to reduce the potential for work during high water flows.

AMM BIO-8 Fish Relocation Plan: Caltrans would develop a fish relocation plan to be approved by NMFS, USFWS, and CDFW prior to construction. This document would guide approved biologists with fish handling experience, in the monitoring and in-water activities (including dewatering), capture, and relocation of protected aquatic species, should they be encountered. Within occupied habitat, capture, handling, exclusion, and relocation activities would be completed no earlier than 48 hours before construction begins to minimize the probability that listed species would recolonize the affected areas.

AMM BIO-10 Diversion and Dewatering: If in-water work cannot be avoided, the contractor would be required to submit a construction site dewatering and diversion plan to Caltrans for approval prior to any dewatering. The plan would include appropriate collection and disposal strategies for sensitive aquatic species and specific fish species. In addition, the contractor would be required to submit an aquatic species relocation plan.

AMM BIO-11 Erosion Control: Plastic monofilament netting (i.e., erosion control matting) or similar material would not be used during construction. Acceptable substitutes would include coconut coir matting or tackifying hydroseeding compounds or engineered streambed material of varying size that is hydrojetted into place to fill potential voids.

AMM BIO-12 Topsoil Recycling: Before beginning ground disturbing activities, to the extent feasible, the contractor would segregate and stockpile topsoil from the Project footprint. After construction, areas disturbed by the project would be covered with the native topsoil.

AMM BIO-13 Bat Protection: The qualified biological monitor shall conduct presence/absence surveys two to three days prior to any tree removal or trimming. If presence/absence surveys are negative, then tree removal may be conducted by following a two-phased tree removal system. On the first day (in the afternoon) limbs and branches will be removed

by a tree cutter using chainsaws or other hand tools. Limbs with cavities, crevices, or deep bark fissures will be avoided. On the second day the entire remaining tree shall be removed.

AMM TRANS-1 Develop a Traffic Management Plan: To offset temporary disruption during construction, a TMP would be developed by Caltrans with input from local partners during the design phase. The TMP would include one-way traffic controls, flaggers, and construction phasing to reduce impacts to local residents and maintain access for emergency services. The TMP would include requirements for coordination with San Mateo County and public notification in the event of an emergency. The TMP would also ensure access to residential driveways that are near construction activities. The TMP would have the added benefit of reducing construction GHG emissions by limiting traffic delays.

Mitigation Measures

Mitigation Measure BIO-1 Mitigation Strategy for CRLF: The Project has the potential to adversely impact the CRLF and its habitat. Caltrans will restore habitat that is temporarily impacted by construction activities, as well as provide on-site mitigation for 0.07 acre of permanent impacts to habitat at a 3:1 ratio. This mitigation could materialize in the form of removing invasive English ivy which is proliferating rapidly at the eastern edge of the Project limits. Following removal of the invasive plants, Caltrans will hydroseed and restore the subcanopy with native, herbaceous plants which will enhance the overall habitat value for CRLF.

Mitigation Measure BIO-2 Mitigation Strategy for CCC DPS Steelhead Critical Habitat: Caltrans proposes that the Project would be self-mitigating for permanent impacts to CCC DPS steelhead critical habitat by halting scour, placing native sediment and planting of riparian zone trees over buried RSP, and other habitat enhancements for steelhead through the use of bioengineering elements. This mitigation proposal is subject to change based on coordination with resource agencies.

Mitigation Measure BIO-3 Mitigation Strategy for CCC ESU Coho Salmon Critical Habitat: Caltrans proposes to mitigate the CCC ESU Coho Salmon critical habitat with a ratio of 1:1. Mitigation Measure BIO-4 below goes into more detail about this strategy. Caltrans strategizes to have no net loss of habitat and to restore the quality of the critical habitat through planting and geoeengineering bank stabilization.

Mitigation Measure BIO-4 Mitigation Strategy for Riparian Habitat: The project is likely to be permitted under a USACE Nationwide Permit #3. Since the project would have a net benefit to the creek by halting scour, the 0.03 acre of permanent impacts to waters of the U.S. would be mitigated at a 1:1 ratio on-site. All temporarily impacted areas would be restored to preconstruction contours and functions to the maximum extent feasible. At the location of the new soldier pile wall, RSP would be buried with native sediment and a commensurate assortment of riparian zone trees would be planted on top to restore the creek bank. This mitigation proposal is subject to change based on coordination with resource agencies.

Mitigation Measure BIO-5 Mitigation Strategy for Tree Removal: Trees would be replaced within the project footprint at a 3:1 ratio for any native trees removed.

Mitigation Measure BIO-6 Mitigation Strategy for Aquatic Resources: Caltrans would develop a strategy to offset impacts to aquatic resources during the permitting phase. Strategies may

include on-site or off-site habitat restoration, the purchase of credits at an approved conservation bank, a contribution to a property acquisition, or other beneficial measures that would contribute to the recovery of aquatic resources.

Appendix C. List of Abbreviations

AB	Assembly Bill
AMM	avoidance and minimization measure
BAAQMD	Bay Area Air Quality Management District
BC	black carbon
BMP	best management practice
BSA	biological study area
Cal-IPC	California Invasive Plant Council
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CE	Categorical Exclusion (NEPA)
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CGP	Construction General Permit
CFR	Code of Federal Regulations
CH ₄	methane
CHP	California Highway Patrol
CNDDB	California Natural Diversity Data Base
CO ₂	carbon dioxide
COZEEP	Construction Zone Enhanced Enforcement Program
CRZ	critical root zone
CTP	California Transportation Plan
CTP 2040	California Transportation Plan 2040
CWA	Clean Water Act
DCH	Designated Critical Habitat
DPS	distinct population segment

DSA	disturbed soil area
EO	Executive Order
ESA	environmentally sensitive area
ESU	evolutionarily significant unit
GWP	global warming potential
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FT	Federally Threatened
GHG	greenhouse gas
HFC	hydrofluorocarbons
IS	Initial Study
ISA	International Society of Arboriculture
LCP	Local Coastal Program
MMTCO ₂ e	million metric tons of carbon dioxide equivalent
MND	Mitigated Negative Declaration
MOU	Memorandum of Understanding
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
N ₂ O	nitrous oxide
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Service
OCRS	Office of Cultural Resources Studies (Caltrans)
OHWM	ordinary high water mark
PA	Programmatic Agreement
PM	post mile
PM _{2.5}	particulate matter 2.5 micrometers or smaller

PQS	Professionally Qualified Staff (cultural resources)
ROW	right-of-way
RSP	rock slope protection
RTP	Regional Transportation Plan
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SE	State Endangered
SLR	sea level rise
SR	State Route
SSC	species of special concern
SPCC	Spill Prevention, Control, and Countermeasures
SWPPP	Storm Water Pollution Prevention Plan
TMP	Transportation Management Plan
USACE	United States Army Corps of Engineers
USC	United States Code
USDOT	United States Department of Transportation
U.S. EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VMT	Vehicle Miles Traveled
WEF	wildlife exclusion fencing
WPCP	Water Pollution Control Program

Appendix D. List of Technical Studies and References

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Appendix E. Potential for Special-Status Species to Occur Within the BSA

Table E-1. Potential for Special-Status Wildlife Species to Occur Within BSA

Common Name (<i>Scientific Name</i>)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
Bay checkerspot butterfly (<i>Euphydryas editha bayensis</i>)	FT	-	All habitat for the bay checkerspot butterfly exists on shallow, serpentine-derived soil. The primary larvae host plant is dwarf plantain (<i>Plantago erecta</i>). When the plantain dries up, the larvae move to purple owl's clover (<i>Castilleja densiflora</i> or <i>C. exserta</i>), which senesces seasonally later.	Absent	No potential to occur. No suitable host plants were observed at the project site; Nor are serpentine-derived soils present.
Crotch's bumble bee (<i>Bombus crotchii</i>)	-	CE	Inhabits open grassland and scrub habitats. Nesting occurs underground. This species is classified as a short-tongued species, whose food plants include <i>Asclepias</i> , <i>Chaenactis</i> , <i>Lupinus</i> , <i>Medicago</i> , <i>Phacelia</i> , and <i>Salvia</i> (IUCN et al. 2021).	Absent	No potential to occur. The project site lacks suitable habitat.
Monarch – California overwintering population (<i>Danaus plexippus</i> pop.1)	FC	-	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. Primary larval host plants include plants of the milkweed genus (<i>Asclepias</i> sp.).	Absent	No potential to occur. No suitable host plants were observed. The project site lacks suitable habitat.
Myrtle's silverspot butterfly (<i>Speyeria zerene myrtleae</i>)	FE	-	Coastal sand dunes or prairie habitat within 3 miles of the coast that are sheltered by wind. Range is from San Mateo County to the mouth of the Russian River.	Absent	No potential to occur. The project site lacks suitable habitat.
San Bruno Elfin butterfly (<i>Callophrys mossii bayensis</i>)	FE	-	Inhabits steep north facing slopes that receive little sunlight. All known locations restricted to San Mateo County on rocky outcrops and cliffs in coastal scrub. Deposit eggs on stonecrop (<i>Sedum spathulifolium</i>).	Absent	No potential to occur. No suitable host plants were observed. The project site lacks suitable habitat.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
western bumble bee (<i>Bombus occidentalis</i>)	-	CE	Nests in mammal burrows or underground cavities on open west-southwest slopes bordered by trees. Would sometimes nest in above-ground locations such as in logs. Requires pollen from non-specific floral resources throughout the duration of the colony period (spring to fall), and suitable overwintering sites for the queens (Xerxes Society 2021).	Absent	No potential to occur. The project site lacks suitable habitat.
California giant salamander (<i>Dicamptodon ensatus</i>)	-	SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Present	Potential to occur. The project site contains physical and biological features for larval and adult life stages.
California red-legged frog (<i>Rana draytonii</i>)	FT	SSC	Inhabits semi-permanent and permanent stream pools, ponds, and creeks with emergent and riparian vegetation and upland areas. Requires slow-moving water for breeding.	Present	Potential to occur. The project site does not contain emergent vegetation that corresponds with species breeding habitat. If present, project site is likely used as aquatic dispersal habitat and upland refugia. Multiple occurrences within 5 miles.
California tiger salamander (<i>Ambystoma californiense</i>)	FT	ST	Frequents grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest. Needs underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding	Absent	No potential to occur. Project site does not contain physical and biological features for various life stages.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
foothill yellow-legged frog (<i>Rana boylei</i>)	-	SE	Stream dwelling. Found mostly near water with rocky substrate, as found in riffles, and on open, sunny banks. Frogs seem to favor channels with at least some shading (>20 percent) cast by riparian vegetation (Hayes and Jennings 1988). However, when canopy closure is too great (>90 percent), foothill yellow-legged frogs are rarely found. Other types of riparian habitats include isolated pools and vegetated backwaters. Streams with riffles containing cobble sized (7.5 cm diameter) or larger rocks as substrate are used as egg laying sites. Needs at least 15 weeks to attain metamorphosis.	Present	Potential to occur. The project site contains physical and biological features for larval and adult life stages. Multiple occurrences within 5 miles.
red-bellied newt (<i>Taricha rivularis</i>)	-	SSC	Stream or river dweller. Found in woodlands and redwood forest along the coastal portion of the state. Egg masses laid under stones, rocks overhanging the creek, or onto submerged roots. Larvae retreat into vegetation and under stones during daylight hours.	Present	Potential to occur. Project site contains physical and biological features for all life stages.
Santa Cruz black salamander (<i>Aneides niger</i>)	-	SSC	Mixed deciduous and coniferous woodlands and coastal grasslands in San Mateo, Santa Cruz, and Santa Clara counties (Santa Cruz Mountains). Adults found under rocks, talus, and damp woody debris.	Present	Potential to occur. Project site contains physical and biological features for adults.
green sea turtle (<i>Chelonia mydas</i>)	FT	-	Inhabits the marine environment. This species is completely herbivorous and needs an adequate supply of seagrasses and algae.	Absent	No potential to occur. The project site lacks suitable habitat.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
leatherback sea turtle (<i>Dermochelys coriacea</i>)	FE	-	Marine; open ocean, often near edge of continental shelf; also seas, gulfs, bays, and estuaries. Mainly, pelagic, seldom approaching land except for nesting.	Absent	No potential to occur. The project site lacks suitable habitat.
loggerhead sea turtle [North Pacific DPS] (<i>Caretta caretta</i>)	FE	-	Near shore and pelagic marine environments. Known to migrate >500 miles from shore, mostly over continental shelf, and in bay, estuaries, lagoons, creeks, and mouths of rivers.	Absent	No potential to occur. The project site lacks suitable habitat.
Olive ridley sea turtle (<i>Lepidochelys olivacea</i>)	FT	-	Both near shore and pelagic marine environments. Habitat includes tropical and subtropical waters, ranging from protected, shallow marine and estuarine waters, including bays and lagoons, to offshore areas well beyond continental shelf.	Absent	No potential to occur. The project site lacks suitable habitat.
San Francisco garter snake (<i>Thamnophis sirtalis tetrataenia</i>)	FE	SE	Utilizes areas surrounding freshwater marshes, ponds, and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important.	Present	Potential to occur. The project site possesses minimal physical and biological features the species requires; would most likely use creek channel as corridor during dispersal activities.
western pond turtle (<i>Emys marmorata</i>)	-	SSC	A nearly exclusive aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 feet elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 miles from water for egg-laying.	Present	Potential to occur. The project site contains some physical and biological features for the adult stage but lacks breeding habitat.
American badger (<i>Taxidea taxus</i>)	-	SSC	Most abundant in drier, open sections of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Present	Potential to occur. The project site provides only marginal habitat due to the high density of trees present. The project site would likely only be used during dispersal to viable foraging sites.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
blue whale (<i>Balaenoptera musculus</i>)	FE	-	Chiefly pelagic.	Absent	No potential to occur. The project site lacks suitable habitat.
fin whale (<i>Balaenoptera physalus</i>)	FE	-	Pelagic; usually found in largest numbers > 25 miles from shore.	Absent	No potential to occur. The project site lacks suitable habitat.
humpback whale (<i>Megaptera novaeangliae</i>)	FE	-	Near shore and pelagic marine ecosystems. Summer distribution is in temperate and subpolar waters. In winter, most humpbacks are in tropical/subtropical waters near islands or coasts.	Absent	No potential to occur. The project site lacks suitable habitat.
killer whale [Southern Resident DPS] (<i>Orcinus orca</i>)	FE	-	Mainly in coastal waters, but may occur anywhere in all oceans and major seas at any time of year.	Absent	No potential to occur. The project site lacks suitable habitat.
North Pacific right whale (<i>Eubalaena japonica</i>)	FE	-	Near shore and pelagic marine environments.	Absent	No potential to occur. The project site lacks suitable habitat.
Sei whale (<i>Balaenoptera borealis</i>)	FE	-	Pelagic. Generally in deep water, along edge of continental shelf and in open ocean. Migrates between lower-latitude wintering grounds and higher-latitude feeding grounds	Absent	No potential to occur. The project site lacks suitable habitat.
sperm whale (<i>Physeter catodon</i>)	Fe	-	Abyssal and Pelagic marine environments. Prefers deep water, sometimes around islands or in shallow shelf waters. Ten to occur in highest densities near productive waters, and often near steep drop-offs or strong oceanographic features, e.g. edges of continental	Absent	No potential to occur. The project site lacks suitable habitat.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
pallid bat (<i>Antrozous pallidus</i>)	-	SSC	Inhabits deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Absent	No potential to occur. The project site lacks suitable habitat. The culverts in the project location are likely too short or close to the ground to be suitable for bat use. The culverts' configuration also increases likelihood of access by predators.
salt marsh harvest mouse (<i>Reithrodontomys raviventris</i>)	FE	SE	Inhabits the salt marshes of San Pablo, Suisun, Corte Madera, Richmond, and South San Francisco Bays. Critically dependent on dense cover. Preferred habitat is pickleweed (<i>Salicornia pacifica</i>).	Absent	No potential to occur. The project site lacks suitable habitat.
San Francisco dusky-footed woodrat (<i>Neotoma fuscipes annectens</i>)	-	SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	Absent	No potential to occur. The project site lacks suitable habitat.
salt marsh wandering shrew (<i>Sorex vagrans halicoetes</i>)	-	SSC	Exclusively inhabit a narrow band of Salicornia marsh. Prefers areas with dense cover and continuous ground moisture. Most individuals occupy "middle marsh habitat" (6-8 feet above sea level).	Absent	No potential to occur. The project site lacks suitable habitat.
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	-	SSC	Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance. Found throughout California in a wide variety of habitats. Most common in mesic sites.	Present	Potential to occur. The project site contains some physical and biological features required by the species. The site is also in a rural area away from human disturbance and may provide suitable habitat for the Townsend's big-eared bat.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
Coho salmon – central California coast (CCC) Evolutionary Significant Unit (ESU) (<i>Oncorhynchus kisutch</i> pop. 4)	FE	SE	Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cool water, cover and sufficient dissolved oxygen. Historical records indicate San Gregorio Creek has supported coho salmon.	Present	Present. The project site contains a large pool where salmonids have been observed.
CCC ESU coho salmon critical habitat	-	-	All river reaches accessible to coho salmon in rivers between Punta Gorda and the San Lorenzo River. Within these streams, critical habitat includes all waterways, substrate and adjacent riparian habitat below longstanding, natural impassable barriers and some specific dams.	Present	Present. San Gregorio Creek has the physical and biological features of coho habitat.
longfin smelt (<i>Spirinchus thaleichthys</i>)	FC	ST	Euryhaline, nektonic & anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Absent	No potential to occur. No suitable open estuary waters are present.
Steelhead – CCC Distinct Population Segment (DPS) (<i>Oncorhynchus mykiss irideus</i> pop.8)	FT	-	From Russian River, south to Soquel Creek, and to, but not including, the Pajaro River. Also San Francisco and San Pablo Bay basins. Requires cover, cool water, sufficient dissolved oxygen, beds of loose, silt-free, coarse cobble substrates for spawning.	Present	Present. The project site contains a large pool where salmonids have been observed.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
CCC DPS steelhead critical habitat	-	-	Critical habitat includes the stream channels within the designated stream reaches, and includes a lateral extent as defined by the ordinary high-water line (33 CFR 329.11). Within these areas, the primary constituent elements essential for the conservation of these ESUs are those sites and habitat components that support one or more life stages, including 1) Freshwater spawning sites, 2) Freshwater rearing sites, 3) Estuarine areas free of obstruction and excessive predation.	Present	Present. San Gregorio Creek within the project area is designated steelhead critical habitat.
tidewater goby (<i>Eucyclogobius newberryi</i>)	FE	-	Lagoons, estuaries, backwater marshes, and freshwater tributaries to estuarine environments that closely correspond to major stream drainages. Typically found in the upper estuary within the freshwater-saltwater interface.	Absent	No potential to occur. The project site lacks suitable habitat.
Delta smelt (<i>Hypomesus transpacificus</i>)	FT	-	Inhabits brackish water. Found only in the Sacramento-San Joaquin Estuary. Found downstream as far as San Pablo Bay.	Absent	No potential to occur. The project site is outside the known range of this species and lacks the appropriate brackish water habitat.
southern DPS Green sturgeon (<i>Acipenser medirostris</i>)	FT	-	Adult and subadult sDPS green sturgeon spend most of their lives in marine and estuarine waters from the Bering Sea, Alaska (Colway and Stevenson 2007) to El Socorro, Baja California, Mexico (Rosales-Casian and Almeda-Juaregui 2009). Adult sDPS green sturgeon can be found in transit within nearshore coastal waters. Spawning of sDPS green sturgeon primarily occurs in the mainstem Sacramento River.	Absent	No potential to occur. The project site lacks suitable habitat.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
DPS green sturgeon critical habitat	-	-	In California coastal bays and estuaries, designated critical habitat is the San Francisco Bay Estuary and Humboldt Bay.	Absent	No potential to occur. The project location is not within designated critical habitat.
black abalone (<i>Haliotis cracherodii</i>)	FE	-	Benthic and near shore marine environments. Specifically, from the high intertidal to 6 m depth, can withstand extreme environmental stochasticity. Known to occupy a variety of rock/ surface types.	Absent	No potential to occur. The project site lacks suitable habitat.
Alameda song sparrow (<i>Melospiza melodia pusillula</i>)	-	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits <i>Salicornia</i> marshes; nests low in <i>Grindelia</i> bushes (high enough to escape high tides) and in <i>Salicornia</i> .	Absent	No potential to occur. The project site lacks suitable habitat.
peregrine falcon (<i>Falco peregrinus</i>)	-	FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site, usually on cliff edges.	Absent	No potential to occur. The project site lacks suitable habitat.
bald eagle (<i>Haliaeetus leucocephalus</i>)	-	SE	Perches high in large, stoutly limbed trees, on snags or broken-topped trees, or on rocks near water. Roosts in communally in winter in dense, sheltered, remote, conifer stands. Nests in large, old-growth, or dominant live tree with open branchwork, most frequently in stands with than 40 percent canopy, but usually some foliage shading the nest. Breeds February through July; peak activity March to June.	Present	Potential to occur. The project site contains some features that would make the site suitable for bald eagle, but the project area does not contain suitable breeding habitat due to the dense concentration of conifers present. Would likely occur as a flyover during foraging activities.

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
bank swallow (<i>Riparia riparia</i>)	-	SE	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Absent	No potential to occur. No suitable vertical bank/cliff nesting habitat present. May occur as a flyover during foraging activities.
black swift (<i>Cypseloides niger</i>)	-	SSC	Prefers forests with rivers and has been known to nest behind waterfalls, on wet cliffs, and in limestone caves.	Present	Potential to occur. The project site contains some physical and biological features for the adult stage but lacks features associated with nesting habitat. Could likely occur as a flyover during foraging activities.
burrowing owl (<i>Athene cunicularia</i>)	-	SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Absent	No potential to occur. The project site lacks suitable habitat.
black rail (<i>Laterallus jamaicensis coturniculus</i>)	-	ST	Found in tidal salt marshes of the northern San Francisco Bay region, primarily in San Pablo and Suisun Bays. Occupies marshes with shallower water than other rallids and requires some tall vegetation to escape into.	Absent	No potential to occur. The project site lacks suitable habitat.
California least tern (<i>Sternula antillarum browni</i>)	FE	SE	Migratory in California; may occupy seacoasts, beaches, bays, estuaries, lagoons, lakes, and rivers. Breeds on sandy or gravelly beaches and banks of rivers or lakes.	Absent	No potential to occur. The project site lacks suitable habitat.
California Ridgway's rail (<i>Rallus obsoletus obsoletus</i>)	FE	SE	Inhabits tidal salt marshes associated with heavy growth of pickleweed; also occurs in brackish marshes or freshwater marshes at low elevations.	Absent	No potential to occur. The project site lacks suitable habitat/

Common Name (Scientific Name)	Federal Rank	State Rank	Habitat Preferences and Range	Habitat Presence	Potential to Occur
long-eared owl (<i>Asio otus</i>)	-	SSC	Occupies deciduous and evergreen forests, orchards, wooded parks, farm woodlots, river woods, desert oases. Wooded areas with dense vegetation needed for roosting and nesting, open areas for hunting. Nests in tress in old nests of crows, squirrels, hawks, etc.; sometimes in tree cavities.	Present	Low potential to occur. The site provides moderate quality breeding habitat; however, the nearest hunting grounds would be located far from potential nesting sites.
marbled murrelet (<i>Brachyramphus marmoratus</i>)	FT	SE	Feeds in near-shore waters typically not exceeding 3 miles from shore; nests inland along coast in old-growth redwood-dominated forests, up to twelve miles inland. Nest often constructed in Douglas-fir trees along horizontal branches, mistletoe infection, or other structure providing platform high in mature conifer.	Present	Potential to occur. Marginal nesting habitat occurs onsite due to the presence of anthropogenic disturbances. May fly over or through area, from higher quality nesting habitat areas to sea to forage.
western snowy plover (<i>Charadrius nivosus nivosus</i>)	FT	SSC	Occupies sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly, or friable soils for nesting.	Absent	No potential to occur. The project site lacks suitable habitat.
yellow rail (<i>Coturnicops noveboracensis</i>)	-	SSC	Emergent wetlands, grass or sedge marshes and wet meadows in freshwater situations. Choose shallow water habitats over deep marsh zones. Average depth used for nesting is 8 to 15 cm. Marshes used for nesting typically contains mixed sedge and bulrush, with cattails in deeper areas.	Absent	No potential to occur. The project site lacks suitable habitat.

Table E-2. Potential for Special-Status Plants to Occur Within BSA

Common Name, <i>Scientific Name</i>	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Franciscan onion, <i>Allium peninsulare</i> var. <i>franciscanum</i>	Alliaceae	-	-	1B.2	Occupies cismontane woodland, valley and foothill grassland. Prefers clay soils and dry hillsides. Weak affinity to serpentine and sometimes on volcanic derived substrates. 170-1000 feet elevation.	May-Jun	N	No potential to occur. Suitable habitat is absent.
Hoover's button celery, <i>Eryngium aristulatum</i> var. <i>hooveri</i>	Apiaceae	-	-	1B.1	Occupies vernal pools. Alkaline depressions, vernal pools, roadside ditches, and other wet places near the coast. 9-147 feet elevation.	Jul	N	No potential to occur. Vernal pools and alkali depressions not present.
white-rayed pentachaeta, <i>Pentachaeta bellidiflora</i>	Asterales/ Asteraceae	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland (often serpentinite). 114-2034 feet elevation. Only extant population is in San Mateo County (USFWS 2010).	Mar-May	N	No potential to occur. Suitable habitat is absent.
Santa Cruz microseris, <i>Stebbinsoseris decipiens</i>	Asterales/ Asteraceae	-	-	1B.2	In open areas, on sandy, shaly, or serpentine substrates. Found within a variety of plant communities, including Closed-cone coniferous forest, broad-leaved upland forest, chaparral, coastal scrub, coastal prairie, and foothill grassland. 32-1640 feet elevation.	Apr-May	N	No potential to occur. Incompatible substrate within BSA.
short-leaved evax, <i>Hesperevax sparsiflora</i> var. <i>brevifolia</i>	Asterales/ Asteraceae	-	-	1B.2	Bluff scrub (sandy), dune, and prairies in coastal settings. <705 feet elevation.	Mar-Jun	N	No potential to occur. No suitable habitat present.
chaparral ragwort (=California groundsel), <i>Senecio aphanactis</i>	Asterales/ Asteraceae	-	-	2B.2	Foothill woodland, northern coastal scrub, coastal sage scrub, chaparral. 49-2625 feet elevation.	Jan-Apr	N	No potential to occur. No suitable habitat present.
Congdon's tarplant, <i>Centromadia</i> (= <i>Hemizonia</i>) <i>parryi</i> <i>ssp. congdonii</i>	Asterales/ Asteraceae	-	-	1B.1	Occurs in valley and foothill grassland. Found on alkaline soils, sometimes described as heavy white clay. 0-754 ft.	May-Nov	N	No potential to occur. No suitable habitat present.
Crystal Springs lessingia, <i>Lessingia arachnoidea</i>	Asterales/ Asteraceae	-	-	1B.2	Occurs in Northern coastal scrub, foothill woodlands, valley grassland. Often found in disturbed soil sites.	Jul-Oct	N	No potential to occur. No suitable habitat present.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
fountain thistle, <i>Cirsium fontinale</i>	Asterales/ Asteraceae	FE	SE	1B.2	Occurs in chapparal, valley and foothill grasslands. Found in seeps and along streams.	May-Oct	N	No potential to occur. No suitable habitat present.
Franciscan Thistle, <i>Cirsium andrewsii</i>	Asterales/ Asteraceae	-	-	1B.2	Broad-leaved upland forest, coastal bluff scrub, coastal prairie, coastal scrub. Often in mesic, sometimes serpentinite conditions. <492 feet.	Mar-Jul	N	No potential to occur. No suitable habitat present.
Jepson's coyote thistle, <i>Eryngium jepsonii</i>	Asterales/ Asteraceae	-	-	1B.2	Occupies clay soils in valley/foothill grassland and vernal pools.	Apr-Aug	N	No potential to occur. No suitable habitat present.
lost thistle, <i>Cirsium praeteriens</i>	Asterales/ Asteraceae	-	-	1A	Habitat undetermined, known only from two collections from Palo Alto (most recently in 1901). Has been postulated to occur as a casual introduction from the Old World. 0-328 feet elevation.		N	No potential to occur. Habitat for this species is unknown, and no observations of this species since 1901. This species was not observed during rare plant surveys.
marsh microseris (Marsh silverpuffs), <i>Microseris paludosa</i>	Asterales/ Asteraceae	-	-	1B.2	Grassy, often moist to wet, areas, usually on slopes; also, in wooded, often open wood, areas and on the edge of brush. Rarely found in vernal pool or dune areas. Found within northern coastal scrub, closed-cone pine forest, valley and foothill grassland, and cismontane woodland communities. 0-984 feet.	Apr-Jun	N	No potential to occur. Although general habitat may be conducive to species it does not provide its preferred microhabitat consisting of breaks in tree cover.
perennial goldfields, <i>Lasthenia californica</i> (=macrantha) ssp. <i>macrantha</i>	Asterales/ Asteraceae	-	-	1B.2	Coastal bluff scrub, coastal dunes, coastal scrub. <1640 feet.	Jan-Nov	N	No potential to occur. No suitable habitat present.
San Mateo woolly sunflower, <i>Eriophyllum latilobum</i>	Asterales/ Asteraceae	FE	SE	1B.1	Found in moist, shady locations on sparsely wooded or steep grassy slopes in San Mateo County.	Apr-Jun	N	No potential to occur. No suitable habitat present.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
woodland woollythreads (Woodland monolopia), <i>Monolopia gracilens</i>	Asterales/ Asteraceae	-	-	1B.2	Often grows in serpentine soils within, grasslands, chaparral, woodland and other similar ecosystems.	Mar-Jul	N	No potential to occur. No suitable habitat present.
San Francisco popcornflower, <i>Plagiobothrys diffusus</i>	Boraginales/ Boraginaceae	-	SE	1B.1	Coastal prairie, valley and foothill grassland. 98-1181 feet elevation.	Mar-Jun	N	No potential to occur. No suitable habitat present.
sand-loving wallflower, <i>Erysimum ammophilum</i>	Brassicales/ Brassicaceae	-	-	1B.2	Chaparral, coastal dunes, and coastal scrub; on sandy substrates in open areas.	Feb-Jun	N	No potential to occur. No suitable habitat present.
Legenere, <i>Legenere limosa</i>	Campanulaceae	-	-	1B.1	Occurs in beds of vernal pools. 1-2887 feet elevation.	Apr-Jun	N	No potential to occur. Incompatible habitat in BSA.
Ben Lomond spineflower, <i>Chorizanthe pungens var. hartwegiana</i>	Caryophyllales	FE	-	1B.1	Forest/woodlands. Conifer forests. Restricted to pockets of sandstone-derived coarse sandy soils. Uplifted ancient marine terraces persisting in a mountain range of volcanic origin.	-	N	No potential to occur. Incompatible substrate type.
Santa Cruz Mountains pussypaws, <i>Calyptridium parryi var. hesseae</i>	Caryophyllales/ Montiaceae	-	-	1B.1	Flat to gently sloping sandy soils in chaparral, oak woodland, conifer forest; 2132-3444 feet elevation.	May-Aug	N	No potential to occur. Incompatible bank topography and substrate in BSA.
San Francisco campion, <i>Silene verecunda ssp. verecunda</i>	Caryophyllales Caryophyllaceae	-	-	1B.2	Coastal bluff scrub, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Most commonly in sandy substrate. 98-2116 feet.	Mar-Jun	N	No potential to occur. No suitable habitat present.
Scouler's catchfly, <i>Silene scouleri ssp. scouleri</i>	Caryophyllales/ Caryophyllaceae	-	-	2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Elevations beneath 1969 feet".	Jun-Aug	N	No potential to occur. No suitable habitat present.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Anderson's (=Santa Cruz) manzanita, <i>Arctostaphylos andersonii</i>	Ericales/ Ericaceae	-	-	1B.2	Mixed and conifer forests as well as shrubland/ chaparral. Found in openings and along forest edges.	Nov-May	N	No potential to occur. Redwood forest incompatible with species.
Kings Mountain Manzanita, <i>Arctostaphylos regismontana</i>	Ericales/ Ericaceae	-	-	1B.2	Broad-leafed upland forest, chaparral, north coast coniferous forest; granitic or sandstone substrates. 1000-2395 feet elevation.	Dec-Apr	N	No potential to occur. Incompatible elevational profile.
Bonny Doon manzanita, <i>Arctostaphylos silvicola</i>	Ericales/ Ericaceae	-	-	1B.2	Forest/swoodland, shrubland/ chaparral, conifer woodland. Inland marine sands in chaparral and ponderosa pine woodlands; sandy substrate.	Jan-Mar	N	No potential to occur. Incompatible substrate.
Ohlone manzanita, <i>Arctostaphylos ohloneana</i>	Ericales/ Ericaceae	-	-	1B.1	Closed-cone coniferous forest, and coastal scrub; siliceous shale substrate.	Feb-Mar	N	No potential to occur. Incompatible substrate.
Schreiber's manzanita, <i>Arctostaphylos glutinosa</i>	Ericales/ Ericaceae	-	-	1B.2	Chaparral and closed-cone coniferous forests on Monterey Shale barrens. 1640-2297 feet elevation.	-	N	No potential to occur. Incompatible elevational profile.
Coastal marsh milk-vetch, <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	Fabales	-	-	1B.2	Coastal dunes (mesic), coastal scrub, marshes and swamps (coastal salt, stream margins)	Jun-Oct	N	No potential to occur. No suitable habitat present.
Pacific grove clover, <i>Trifolium polyodon</i>	Fabales/ Fabaceae	-	SR	1B.1	Closed-cone coniferous forest, coastal prairie, meadows and seeps, valley and foothill grassland; mesic environments occasionally on granitic substrates.	Apr-Jun	Y	Potential to occur. Strategically planned surveys to capture variable temporal blooming regimes did not detect species within Caltrans ROW.
Santa Cruz clover, <i>Trifolium buckwestiorum</i>	Fabales/ Fabaceae	-	-	1B.1	Broad-leafed upland forest, cismontane woodland, coastal prairie. Most occurrences in grassy areas; often in damp places such as wet drainages near roads and shallow depressions.	Apr-Oct	N	No potential to occur. No suitable habitat present.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Two-fork clover, <i>Trifolium amoenum</i>	Fabaceae	FE	-	1B.1	Occupies coastal bluff scrub and valley/ foothill grassland (occasionally serpentinite). 16-1361 feet elevation.	Apr-Jun	N	No potential to occur. No suitable habitat present.
Minute pocket moss, <i>fissidens pauperculus</i>	Fissidentales	-	-	1B.2	On bare, moist soil banks, often growing with <i>Fissidens bryoides</i>	N/A	Y	Potential to occur. Suitable habitat is present in BSA. Rare plant surveys did not detect species.
Toren's grimmia, <i>Grimmia torenii</i>	Grimmiaceae	-	-	1B.3	Chaparral, cismontane woodland, and lower montane coniferous forest; in openings with rocky, boulder and rockwalls.	N/A	N	No potential to occur. Suitable microhabitat consisting of rocky features is absent.
Vaginulate grimmia, <i>Grimmia vaginulata</i>	Grimmiaceae	-	-	1B.1	Chaparral; rocky, boulder and rock walls.	N/A	N	No potential to occur. No suitable habitat present.
San Mateo thorn-mint, <i>Acanthomintha duttonii</i>	Lamiaceae	FE	SE	1B.1	Occupies uncommon serpentinite vertisol clays in chaparral and valley/ foothill grassland. Strict endemic to serpentine. Found in relatively open areas. 164-984 feet elevation.	Apr-Jun		No potential to occur. Incompatible substrate present.
Point Reyes meadowfoam, <i>Limnanthes douglasii</i> ssp. <i>sulphurea</i>	Limnanthaceae	-	SE	1B.2	Coastal prairie, meadows and seeps (mesic), marshes and swamps (freshwater), vernal pools	Mar-May	N	No potential to occur. No suitable habitat present.
Choris' popcornflower, <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	Lamiales (poss. Δ Boraginales)/ Boraginaceae	-	-	1B.2	Grassy, mesic environments, ephemeral drainages, coastal scrub, chaparral; elevation < 2132 feet.	Mar-Jun	N	No potential to occur. No suitable habitat present.
bent-flowered fiddleneck, <i>Amsinckia lunaris</i>	Lamiales/ Boraginaceae	-	-	1B.2	Open, sometimes moist, wooded slopes within foothill/ cismontane woodland and valley grassland communities. 10-1,650 feet elevation.	Mar-Jun	N	No potential to occur. No suitable habitat present.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Fragrant fritillary, <i>Fritillaria liliacea</i>	Liliales/ Liliaceae	-	-	1B.2	Open grassy hills and fields near the coast, often in heavy clay soil, sometimes on serpentine substrates. Sometimes occurs in/near claypan vernal pools. Found within coastal prairie, valley grassland, northern coastal scrub, and cismontane woodland communities. 0-656 feet elevation.	Feb-Apr	N	No potential to occur. Suitable habitat is absent within the BSA.
Arcuate bush-mallow, <i>Malacothamnus arcuatus</i>	Malvales/ Malvaceae	-	-	1B.2	Chaparral and Cismontane woodlands. 49-1164 feet elevation.	Apr-Sep	N	No potential to occur. Suitable habitat is absent within the BSA.
Western leatherwood, <i>Dirca occidentalis</i>	Malvales/ Thymelaeaceae	-	-	1B.2	Occupies mesic areas in broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, north coast coniferous forest, riparian forest, and riparian woodland. On brushy slopes and mesic sites. Mostly in mixed evergreen and foothill woodland communities. 82-1394 feet elevation.	Jan-Mar	Y	Potential to occur. Strategically planned surveys to capture variable temporal blooming regimes did not detect species within CT ROW.
Marin western flax, <i>Hesperolinon congestum</i>	Malpighiales/ Linaceae	FT	ST	1B.1	Occupies serpentinite in chaparral and valley/ foothill grassland. 4-1213 feet elevation.	Apr-Jul	N	No potential to occur. Incompatible substrate in BSA.
White-flowered rein orchid (White piperia), <i>Piperia candida</i>	Orchidales	-	-	1B.2	Broadleafed upland forest, lower montane coniferous forest, and North Coast coniferous forest; sometimes on serpentinite substrates.	May-Sep	Y	Potential to occur. Strategically planned surveys to capture variable temporal blooming regimes did not detect species within CT ROW.
Kellman's bristle moss, <i>Orthotrichum kellmanii</i>	Orthotrichaceae	-	-	1B.2	Chaparral and cismontane woodland on sandstone and carbonate substrates.	Jan-Feb	N	No potential to occur. Suitable habitat is absent within the BSA.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Monterey pine, <i>Pinus radiata</i>	Pinales/ Pinaceae	-	-	1B.1	Closed-cone coniferous forest and cismontane woodlands.	N/A	N	Not present. Although suitable habitat is present in BSA, rare plant surveys did not detect this conspicuous, evergreen species.
Santa Cruz cypress, <i>Hesperocyparis abramsiana</i> var. <i>abramsiana</i>	Pinales	FT	SE	1B.2	Sandstone or granitic. Closed-cone coniferous forest, chaparral, and lower montane coniferous forest. 1000-2500 feet elevation.	N/A	N	No potential to occur. Incompatible elevational profile.
Butano Ridge cypress, <i>Hesperocyparis abramsiana</i> var. <i>butanoensis</i>	Cupressaceae	FT	SE	1B.2	Closed-cone coniferous forest, Chaparral, and lower montane coniferous forest. Occurs on sandstone.	Oct	N	No potential to occur. The BSA is outside the species extant range.
Blasdale's bent grass (cliff bentgrass), <i>Agrostis blasdalei</i>	Poales (Cyperales)	-	-	1B.2	Coastal bluff, coastal dune, and coastal prairie habitats.	May-Jul	N	No potential to occur. No suitable habitat present.
Round-headed Chinese houses, <i>Collinsia corymbosa</i>	Plantaginaceae	-	-	1B.2	Coastal dunes. 0-65 feet elevation.	Apr-Jun	N	No potential to occur. No suitable habitat present.
Kellogg's horkelia, <i>Horkelia cuneata</i> var. <i>sericea</i>	Rosales/ Rosaceae	-	-	1B.1	Closed-cone coniferous forest, chaparral (maritime), coastal scrub on sandy or gravelly soil, openings. Old dunes, coastal sandhills: Elevation generally <656 feet elevation.	Apr-Sep	N	No potential to occur. Incompatible substrate.
Dudley's lousewort, <i>Pedicularis dudleyi</i>	Lamiales/ Orobanchaceae	-	SR	1B.2	Chaparral (maritime), cismontane woodland, North Coast coniferous forest, valley and foothill grassland.	Apr-Jun	Y	Potential to occur. Strategically planned surveys to capture variable temporal blooming regimes did not detect species within CT ROW.

Common Name, Scientific Name	Order/ Family	Conservation Status			Habitat	Bloom Period	Habitat Present?	Potential to Occur
		FESA	CESA	CNPS				
Santa Cruz Mountains beardtongue, <i>Penstemon rattanii</i> <i>var. kleei</i>	Scrophulariales/ Plantaginaceae	-	-	1B.2	Redwood, hardwood forests, Open woodland and chaparral, disturbed field near roadside. 1312-1968 feet elevation.	May-June	N	No potential to occur. Incompatible elevational profile.
Rose leptosiphon, <i>Linanthus rosaceus</i>	Solanales/ Polemoniaceae	-	-	1B.1	Coastal bluff scrub. <328 feet elevation. Presumed extirpated in SF County.	Apr-Jul	N	No potential to occur. No suitable habitat present.